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THE WILLAMETTE FALLS LOCKS: A CASE STUDY ANALYSIS OF POTENTIAL TRANSFER ISSUES

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ONE WILLAMETTE RIVER COALITION

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October 23, 2008

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THE WILLAMETTE FALLS LOCKS: A CASE STUDY ANALYSIS OF POTENTIAL TRANSFER ISSUES

EXECUTIVE SUMMARY

This report lays out a conceptual "road map" for transferring ownership of the historic Willamette Falls Locks from the U.S. Army Corps of Engineers to a non-federal entity. Specifically, this report presents issues to be addressed as identified through a review of current conditions at the locks and a case study analysis of similar ownership transfers. It also presents a conceptual process map – introduced below - to organize those steps as may be needed to complete a successful transfer.

The case study methodology looked at three previous Corps navigation facility transfers. These were:

- The transfer of eleven locks and dams along 86 miles of the Muskingum River to the state of Ohio.

- The transfer of fourteen locks and dams along almost 255 miles of the Kentucky River to the state of Kentucky.

- The transfer of seven locks along 39 miles of the Lower Fox River to the state of Wisconsin.

Five general themes emerged from these case studies:

1. Transfer parties should develop a compelling vision and an advocacy-oriented support base to guide and lead the effort over time. As one interviewee explained, coordinating the multiple participants and processes involved in such a transfer is a major challenge. A clearly articulated statement of goals and expected benefits,

promoted by passionate and dedicated advocates, assists in keeping all parties oriented on the goals to be achieved.

2. Transfer parties should expect a lengthy process. The time between inception and facility transfer ranged between ten and almost sixty years in the three case studies examined. Although the Willamette Falls Locks are significantly smaller in scale than the case study projects, the basic tasks to be accomplished are essentially the same. Sufficient time should be allowed for due diligence, planning, negotiation of suitable transfer terms and completion of the agency and legislative processes.

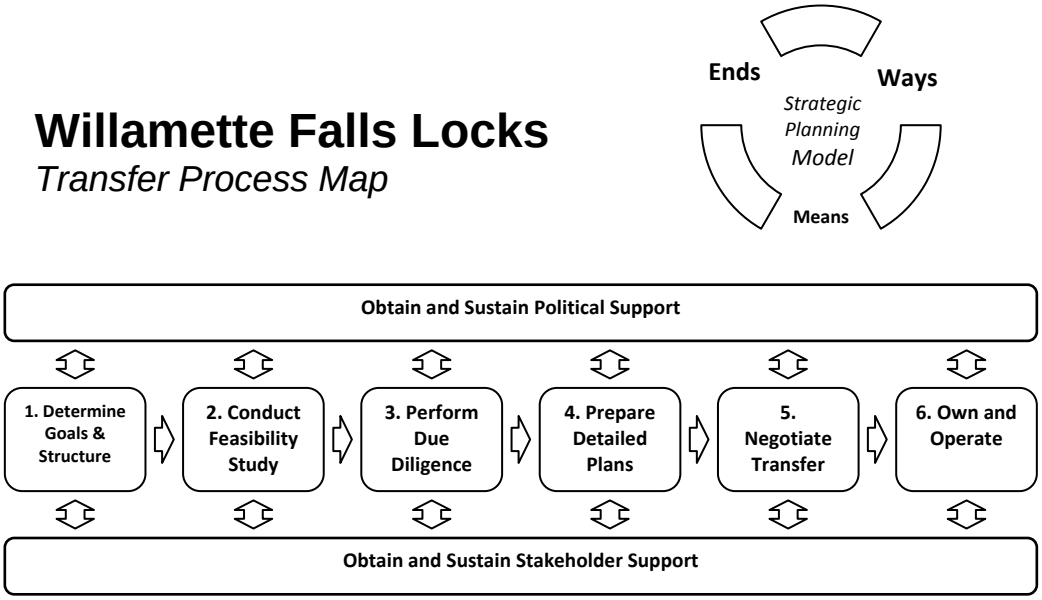
3. Participants should make a significant investment in planning for both pre- and post-transfer. The most successful of the case studies reviewed included planning that not only provided a clear picture of how to accomplish the transfer, but also resolved post-transfer funding and operational issues before the transfer took place. Thorough planning also allowed the recipient to negotiate transfer terms far more favorable than those obtained in previous transfers.

4. Participants should devote significant energy into building and sustaining support from stakeholders (users, local business leaders, community leaders) and government leaders (federal and state agency staff and elected officials) throughout the duration of the transfer process and on into ownership and operation. Stakeholders and government leaders are likely to change over the course of the process. Having an institutionalized core leadership group, as described in 1 above, can sustain the effort and educate new participants who become involved in the project over time.

5. Participants should be prepared for an ongoing financial commitment, both pre- and post-transfer. Prior to transfer, funding is needed to maintain an advocacy organization and perform the due diligence necessary to protect the recipient. After transfer, funding is needed for ongoing operations and maintenance, repairs and rehabilitation, and to maintain the advocacy organization to promote use of the facility and maintain support necessary to meet ongoing funding needs.

The conceptual process map is diagrammed below. It consists of eight steps. Six are generally sequential, with each needing to be substantially complete before the next should begin. Two are continuous. Key tasks and activities to be accomplished at each step are described in the body of the report.

Also shown is a general strategic planning model. This model illustrates the necessary, ongoing review and balancing of the ends to be achieved, the ways (or processes) by which they will be achieved, and the means available (funds, technology, staff, political and local support) to bring them about. This balance should be revisited and revised as needed during each of the steps of the process map.



CHAPTER 1

STUDY OVERVIEW

PURPOSE AND OBJECTIVES:

This report lays out a conceptual "road map" for transferring ownership of the historic Willamette Falls Locks from the U.S. Army Corps of Engineers to a non-federal entity. Specifically, this report identifies issues – derived from the public record and experiences of others involved in similar transfers - that should be addressed before such a transfer takes place. These issues include those leading up to the transfer itself and subsequent operation of the transferred facilities.

This report does not constitute financial or legal advice or opinion, and the authors strongly encourage the client to seek financial, engineering, legal, and other professional advice as may be appropriate before entering into any agreements with the Corps or other parties. This project is not intended to perform the necessary technical, legal, engineering, and environmental studies or other due diligence actions as may be necessary or advisable for an actual transfer of ownership. It is intended to suggest directions that such due diligence efforts may wish to follow and present a starting point from which they may begin.

The report analyzes three case studies.[1] Each case study involved the transfer of federal navigation facilities from the U.S. Army Corps of Engineers to non-federal ownership. Although experiments in various operational arrangements occurred in each case studied (delegation of lock operations to county commissions on the Muskingum; operating lease arrangements

[1] A fourth case study was briefly reviewed as well. In the mid 1950's, three obsolete locks and dams on the White River in Arkansas were decommissioned and transferred from Corps ownership. Lock #1 was sold to the town of Batesville for $1. Locks #2 and #3 were sold to private interests and have not been operated for navigation since. Small hydropower facilities were subsequently installed at each of those two sites at a cost of $32 million. The plants generate average monthly revenue of $150,000. (Potts, 2008). The circumstances of this transfer and subsequent operation appear to have little application to the Willamette Falls Locks project. Consequently, it was not further studied for this report.

between the Corps and states for the Kentucky and Fox River facilities) in no case were the navigation facilities ultimately transferred to other than state ownership.[2]

SELECTION OF CASE STUDIES:

The case studies were selected based on availability of information and the relevance of the transfer and operational experience to the Willamette Falls Locks. The case studies selected are:

- The 1958 transfer of eleven locks and dams along 86 miles of the Muskingum River to the state of Ohio. The process began in the 1940s. The system is managed by Ohio's Department of Natural Resources.

- The piecemeal transfer of fourteen locks and dams along almost 255 miles[3] of the Kentucky River to the state of Kentucky. Although the process began in the 1950s, the first lock was not transferred until 1996 and the last in 2006. Unlike Ohio, which assigned the transferred facilities to an existing state agency, Kentucky created a separate authority for the purpose of initially leasing and then obtaining ownership and operating the locks and dams.

- The 2004 transfer of seven locks along 39 miles of the Lower Fox River to the state of Wisconsin. As was done in Kentucky, Wisconsin created a separate state authority expressly for the purpose of restoring, maintaining and operating the navigation system.

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[2] An example of transfer to county ownership was discovered very late in the process of preparing this report and not further pursued due to time and research budget limitations. A lock and dam on the Yamhill River near Lafayette, Oregon, originally built and operated by the Corps of Engineers was sold to Yamhill County in 1959. The dam and lock gates were subsequently removed. The land near the lock's ruins is now part of the county park system. A further description is provided in Chapter 2.

[3] The length of the system is presented in various sources as 205, 256, and 254.7 miles. The length of 254.7 miles, found in a Corps of Engineers document presented in Johnson and Parrish, 1999, p. 3, is the figure used for this report.

ORGANIZATION OF REPORT:

This report is organized into seven chapters. Following this overview, an assessment of the current condition of the Willamette Falls Locks is presented. The information provided is based on materials available online, readily available in local files, and obtained through interviews with personnel from the Portland District, U.S. Army Corps of Engineers. The section identifies issues regarding real estate, budget history, operating and maintenance costs, maintenance backlog, usage, known or anticipated environmental conditions, and known or anticipated social and cultural resource constraints as may be relevant to inform a more detailed due diligence effort should a transfer of ownership be pursued.

The next three chapters each present one of the three case studies. The information presented is based on material available online or as could be obtained through interviews with personnel from the state agencies and the Corps Districts involved. Each chapter presents a short historic overview, a description of facilities transferred, an assessment of the success of each transfer, and transfer and operational issues identified in the periods leading up to and after the transfer occurred. It also presents recommendations offered by interviewees and concludes with findings and conclusions as may be relevant to a transfer of Willamette Falls Locks. References used are cited. A number of additional references that were identified during the course of the study but not directly cited in this report are listed as they may be relevant to a more detailed due diligence effort.

Chapter 6 summarizes and synthesizes the findings from the review of the current conditions and case studies. The findings are categorized as "success factors" or "cautions." As the names imply, success factors are those actions, decisions, or events that contributed to either the success of the transfer itself and/or the subsequent operation of the transferred facilities. Cautions are those that either were attempted and did not succeed or can reasonably be anticipated and avoided. Chapter 7 presents a "process map" identifying actions to be taken, in general sequence, should the ownership transfer of the Willamette Falls Locks be pursued.

CITED REFERENCES:

Potts, R.J. (2008, June). Adding Hydro to Existing Dams: The Story of Arkansas' White River Projects. Hydro Review, 27 (3), 50-57.

CHAPTER 2

THE WILLAMETTE FALLS LOCKS: CURRENT CONDITIONS

INTRODUCTION:

The Willamette Falls Locks is one of the oldest continuously operating multi-lift lock and canal systems in America. The canal around Willamette Falls and its four locks were built by the Willamette Falls Canal and Locks Company in 1872 and opened on New Year's Day, 1873. The locks were operated by a number of owners before the U.S. Army Corps of Engineers purchased them in 1915 from the Portland Railway Light and Power Company. (Lewis, 2008).

The Willamette Falls Locks have multiple lifts, climbing a vertical height of 41 feet. The locks are composed of four chambers that are each 40 feet wide and 210 feet long, a canal basin, a flood control lock chamber at the upstream end of the canal, and an upper approach structure 300 feet long and lower approach structure 150 feet long. Originally the locks were operated by hand-cranks. (U.S. Army Corps of Engineers, 1998).

The locks were renovated following their purchase by the Corps and again in 1941. In 1916 the locks were deepened to 6 feet. In 1941 the original wooden lock gates were replaced with steel miter gates and hydraulic operating machinery replaced the original hand-cranks. In the late 1960's and early 1970's, steel miter gate leaves were replaced. After the flood of 1996 some of the electrical equipment was relocated and replaced to reduce the risk of future flood damage. (U.S. Army Corps of Engineers, 1998; personal knowledge of author).

The locks were placed on the National Register of Historic Places in 1974 and were designated as a State Historic Civil Engineering Landmark by the History and Heritage Committee of the American Society of Civil Engineers in 1991. (Lewis, 2008).

Adjacent to the locks site are other facilities important to Portland regional history. In 1889 a paper mill – currently owned by the West Linn Paper Company - was built adjacent to the

locks. The Sullivan hydroelectric power plant and associated dam[4] were constructed by the forerunner to Portland General Electric Company in 1889, providing the first long distance transmission of hydroelectricity in the country. A fish ladder over the dam was first built over the falls in 1885 and then redesigned and rebuilt by the Oregon Department of Fish and Wildlife in 1971. (Willamette Falls Heritage Foundation, 2008; Portland General Electric, undated).

This chapter presents an overview of the current conditions at the Willamette Falls Locks and introduces issues that should be addressed should a decision to seek a transfer of ownership be made. It is organized into three sections addressing Real Estate, Operations and Maintenance, and Known and Anticipated Operating Constraints. Each section addresses recent history and current conditions. The chapter concludes with a short summary of findings and conclusions.

Real Estate:

Estimated Present Value:

The official estimated present value (as of 2008) for land and structures is $2,714,918.12**.** This figure does not include any unattached equipment, tools, or content of the buildings. (Crisola, 2008).[5] This estimated present value is based on Corps asset valuation methodology and may or may not reflect market value or replacement cost.

Title, Easements, and Leasing Arrangements:

The locks passed through the hands of several private companies before the U.S. Army Corps of Engineers purchased the site in 1915 for $375,000 (Willamette Falls Heritage Foundation, 2008). Title to the locks themselves is fairly clear but the survey of the property boundaries is very unclear. Further complicating matters are cloudy easement and working

[4] The dam is not part of the Willamette Falls Locks project. It was constructed as part of the hydroelectric plant and all regulations pertaining to it are the responsibility of Portland General Electric.

[5] This information was provided via email by the Portland District's Chief of Resource Management, citing data from the Corps of Engineers Financial Management System (CEFMS).

arrangements with and between other entities who built facilities after the locks and dam were completed.[6] (Interview, Portland District Chief of Management and Disposal, 2008).

As noted in the introduction, the West Linn Paper Company, Portland General Electric, the Oregon Department of Fish and Wildlife, and the Corps of Engineers each have facilities or interests at the site of the Willamette Falls Locks. Easements are held by each of these parties allowing access to their respective facilities across paper mill or Corps owned property. These easement relationships are complicated and not well documented. (Interview, Portland District Chief of Management and Disposal, 2008). However, the authors have recently learned of property surveys and title searches that were conducted as part of PGE's dam relicensing with FERC. A PGE representative has noted that part of that process included an extensive review of the properties adjacent to the lock. (Interview with PGE Director of Relicensing, 9/2/08)

Additionally, the Corps at one time leased land from the mill for parking. The lease has expired and the only parking is immediately adjacent to the maintenance and office structure. Documentation and legal agreements allowing road and pedestrian access to the parking area are not up to date and would require resolution before the property could be transferred. (Interview, Portland District Chief of Management and Disposal, 2008).

Funding constraints have precluded real estate compliance inspections for over ten years. According to the Portland District Real Estate office, significant work would need to be done before a transfer could occur. A rough estimate of the cost for surveys and document preparation is approximately $35,000, though this figure could be reduced if PGE's recent reviews have covered some of the affected lands. An additional estimated $15,000 would be needed for an environmental Phase 1 record search as required under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). If contaminants are found,

[6] Another potential source for title information is Ticor Title in Portland. The company did the title research for the Crown Zellerbach sale in the 1980's. They have copies of real estate records dating back to the 1850's for the property around Willamette Falls.

clean-up costs will be additional and are very difficult to estimate.[7] (Interview, Portland District Chief of Management and Disposal, 2008).

OPERATIONS AND MAINTENANCE:

History of Usage:

Willamette Falls Locks first opened to use in 1873. Commercial usage peaked in 1943, when 2.2 million tons of freight passed through the locks. Commodities included logs, pulp and paper as well as sand and gravel for the construction industry. In 1996 the West Linn Paper Company bought the paper mill and decided to convert to truck transportation, virtually ending commercial lockages. The transport of sand and gravel had phased out several years earlier. (BST Associates, 2005). The predominant current use is recreational traffic, either by privately owned small boats or tour boats. When the locks were staffed many school groups also visited the site annually for educational purposes (personal knowledge of author). Family groups also visit the lock for picnicking and sightseeing. Visitation data are shown at Table 2-1.

Table 2-1.

Willamette Falls Locks Park Visitation Data (Rinehart, 2008)

Calendar Year	Visitor Hours	Visits
1991	24,684	
1992	55,400	
1993	35,000	
1994	54,600	
1995	99,600[8]	

[7] The estimated costs shown here and throughout this chapter are as provided by the Portland District, Corps of Engineers and based on the best available information at the time of this writing. However, it is strongly recommended that all estimates be independently verified should a transfer be pursued.

[8] The authors' question the 99,600 visitation hours recorded in 1995 based on their knowledge of the project and normal visitation patterns. Consequently, it will be treated as an outlier and discounted from further analysis in the remainder of this report.

1996	42,600	
1997	46,400	
1998	39,837	
1999[9]	24,284	
2003 (Apr – Sept)[10]		6,567
2004	1,774	1,281
2005	12,870	8,980
2006	1,172	834
2007	3,263	2,357

Definitions

Visitor-Hours: A visitor hour is defined as the presence of one or more persons on an area of land or water, engaging in one or more recreation activities aggregating to 60 minutes.

Visits: The entry of one person into a recreation area or site to engage in one or more recreation activities. "Visits" is simply a head count of visitors and does not indicate duration of use or length of stay.

Vessel lockage data is presented at Table 2-2. As shown in Table 2-2, the total number of vessels locked through Willamette Falls Locks decreased almost 77% from 2000 to 2005. This decrease corresponds to the decrease in operational funding and operating hours shown in Table 2-3 below. The increase in total vessels locked in 2006 and 2007 is generally attributed to the additional operating hours made possible through supplementary funding provided by the Oregon Department of Transportation and Clackamas County on behalf of The One Willamette River Coalition (the Coalition), a coalition of public and private sector financial partners.

[9] Visitation information for the years from 2000 to 2002 is not available.

[10] After 2000 Corps policy required that data be recorded for both visitor hours and visits.

Table 2-2.

Willamette Falls Locks Lockage Data[11, 12]

Calendar Year	Commercial		NonCommercial		Recreational		Total	
	Lockages	Vessels	Lockages	Vessels	Lockages	Vessels	Lockages	Vessels
2000	272	443	10	10	1,221	2,548	**1,503**	**3,001**
2001	190	338	16	16	731	1,831	**937**	**2,185**
2002	180	229	4	4	605	1,068	**789**	**1,301**
2003	140	145	0	0	408	756	**548**	**901**
2004	149	149	0	0	160	787	**309**	**936**
2005	76	84	7	7	227	612	**310**	**703**
2006	181	231	4	4	304	795	**448**	**1,030**
2007	174	216	2	2	406	1,052	**582**	**1,270**

Source: US Army Corps of Engineers Lock Performance Monitoring System (LPMS) data base at www.iwr.usace.army.mil/ndc/lpms.

Visitation and lockages can vary widely based on weather, special events, and methods of data collection. 1996 was a year of extreme weather and flooding and visitation decreased significantly from the year before. In 1997 staffing at the project was reduced from seven to three "full time equivalents" (FTE)[13] of personnel and new management instituted more rigorous visitor counting methods. Traditional car traffic counters do not work at Willamette Falls Locks and the reduced staff was not on site sufficient hours to count all walk-on visitors.

The reason for the decrease in lockages from 2000 to 2005 may be due to many factors, including reduced hours of operation. In 2000 the number of recreational fishing vessels was extremely high due to a record fish return that year (personal knowledge of author). The degree,

[11] LPMS data for Willamette Falls Locks is not available prior to 2000.

[12] The accuracy of specific commercial and noncommercial data is uncertain for FY 06 and FY 07.

[13] "Full time equivalents" is the government's way of tracking personnel employment. Three "full time equivalent" is equal to three employees working a full year, six temporary employees working a half year each, nine employees working four months each, etc. It does not necessarily equate to the number of people on site at any one time.

if any, that the decrease in usage may be attributable to a drop off in demand for lock services should be determined as part of the feasibility study should ownership transfer be pursued.

Annual Operating and Maintenance Costs:

Willamette Falls Locks received sufficient funding to provide operation 365 days a year with regular maintenance and periodic major repairs through 1994. A full time staff of seven operated and maintained the lock year round. However, the implementation of national performance standards combined with declining commercial traffic and flat funding for the Corps' Operations and Maintenance budget nationwide resulted in dramatic funding reductions beginning in 1995. The flood of 1996 caused some damage to the project resulting in additional monies being made available through a flood supplemental bill for repairs. By 1997 the staff was cut to 3 full time equivalents with back up support provided by the Bonneville Project. The position of Willamette Falls Locks Project Manager was also eliminated and responsibility was transferred to the Operations Manager of Bonneville Dam. By FY2004 the President's Budget provided no money for operations and only through Congressional action was money appropriated. As of this writing, the national emphasis is to put under-utilized projects into caretaker status, or to transfer them to nonfederal entities. (Personal knowledge of author).

Table 2-3 depicts Corps expenditures for Willamette Falls Locks, based on year-end 3011a CEFMS (Corps of Engineers Financial Management System) reports, between fiscal years 1994 and 2007. Additional funds were provided by the Coalition in 2006 in the amount of $156,800. After expenditures for labor and supplies, $66,891 was carried over for 2007. (Data via email, Operations Project Manager, Bonneville Project, 2008).

Table 2-3.

Annual Willamette Falls Locks Operations and Maintenance Expenditures

Fiscal Year	Amount	Notes
1994	$ 1,253,840	12 month operation
1995	$ 745,193	12 month operation
1996	$ 1,242,935	12 month operation; flood supplemental $$
1997	$ 696,184	Reduced staff; 12 month operation
1998	$ 865,491	12 month operation
1999	$ 498,267	6 month operation
2000	$ 553,632	6 month operation
2001	$ 1,336,314	6 month operation; lock repairs
2002	$ 175,897	1 month limited service; 5 months full service
2003	$ 208,029	1 month limited service; 5 months full service
2004	$ 288,805	1 month limited service; 5 months full service
2005	$ 191,210	Partial service during summer months
2006	$ 72,070	Partial service during summer months
2007	$ 61,117	Partial service during summer months

$60,000 was appropriated for FY2008 to maintain the locks in caretaker status. One Willamette River Coalition funds of $20,348.60 remaining from FY2007 were carried over to be expended no later than May 18, 2008. No additional Coalition funds for routine maintenance have been provided to date in FY2008. However, the Coalition was successful in getting the Corps to allocate $511,000 in funds for a hydraulic steel structure inspection. Contractor bids to perform the inspection were opened on 9 September 2008. As of this writing the district is reviewing the bids. It is anticipated that the inspection will take place in early winter 2008. Until the contract is awarded it will be uncertain whether any federal money will be available in FY2008 to fund repairs that may be identified during the course of the inspection. (Interviews,

USACE Portland District engineering staff, 2008). The Coalition has reserved $130,000 for this purpose.

Estimated Maintenance Backlog:

There is no single clear, concise assessment of the Willamette Falls Locks maintenance backlog. The information presented below was obtained from assessments made by INCA Engineers, Inc., BST Associates, a review of Portland District periodic maintenance reports, and through interviews with Portland District staff familiar with the project conditions.

In April 2007 the Clackamas Heritage Partners, on behalf of the Coalition contracted with INCA Engineers, Inc. to conduct an engineering study to determine the structural integrity of the locks and to identify any major structural improvements that may be required in the next 20 years. INCA's findings regarding major work likely to be required by 2027 are shown at Table 2-4.

Personnel at the Portland District familiar with the project believe these figures may be very low. Interviews with the current project management and maintenance staff provided indications of additional work that may be needed. For example, Willamette Falls Locks experienced two reportable spills of hydraulic oil over the past three years. To prevent future spills and fines the hydraulic piping will need to be replaced. The interviews also revealed that the staff has informally considered redesign and/or material changes to reduce future operations and maintenance costs. The INCA report does not include the hydraulic piping replacement or such redesign, nor does it include contract administration costs for the work it does identify. (Interviews, Project Operation Manager, Chief of Maintenance, and Chief of Engineering and Contracting, Bonneville Project, June-July 2008).

Table 2-4.

INCA Assessment of Major Work Anticipated by 2027

Work Anticipated	Estimated Cost
Replacement of missing lock wall stones	$ 40,000
Replacement of a portion of lock wall timber lining and framing	$1,000,000
Repair/refurbishment of miter gates and operating machinery	$1,600,000
Replacement of digital controls	$ 12,000
Replacement of standby generator and new fuel tank	$ 50,000
Documentation of Electrical/Power system	$ 50,000
Possible flood recovery cost	$ 50,000
Total	**$2,802,000**

Source: INCA Engineering, Inc. 2007
Willamette Falls Locks Engineering Study

According to the BST Associates' Willamette Falls Locks Economic Impact Analysis Final Report, the Corps estimated its annual maintenance costs prior to 2001 to be approximately $300,000 per year. The BST report assumes up to $200,000 of additional maintenance and replacement costs per year, concluding that operations and maintenance will average $424,000 per year.[14] The actual amount will depend upon the condition of the locks at the time of transfer. If major repairs are accomplished and updated design/materials are installed prior to transfer, the annual maintenance costs could be lower.

Additional work identified in the Portland District's 2007 Annual Maintenance Report for Willamette Falls Locks is summarized at Table 2-5. The Corps did not provide estimates for the costs of these work items. In addition to these items, several new areas of cracking and seeping water have been found on the sidewalk and pavement adjacent to the area between the maintenance office and the bridge crossing. Water is flowing along the sidewalk 2"-3" deep,

[14] It is not clear from the report whether this figure represents a twelve or six month operating year. Furthermore, the numbers in the BST report are based on three years of extremely constrained funding and, on the surface, do not add up. The experience in the three case studies indicates that actual maintenance costs will likely be higher than these estimates indicate. Further analysis should be conducted to clarify what the likely maintenance costs will be as part of the due diligence effort.

even under dry weather conditions. The sources of this water are unknown as of this writing. (Interview, Chief of Maintenance, Bonneville Project, 2008). Additional maintenance requirements will likely be identified through the Hydraulic Steel Structure Inspection (HSS) of the locks anticipated to take place in the early winter of 2008-2009. This inspection will provide an extensive look at the structures with the locks dewatered and provide some opportunity for immediate repairs using the $130,000 provided by the Coalition and federal funds as may be available. More accurate estimates of additional structural repairs will be possible when the inspection report is made available. However, the HSS will not look at all aspects of the locks, such as the office buildings, roadways, and other support facilities and equipment.

Finally, interviews with Portland District staff indicate that normal routine maintenance has not been performed for the last seven years due to limited funding. Prior to 1996 for example, the staff of seven worked through the winter months replacing up to 100 timbers a year. Since 1996, only failed timbers have been replaced. If funding allows, consideration should be given to a change of material that will have a much longer life and reduce future maintenance costs, consistent with the historic nature of the locks and upon coordination with the State's Historic Preservation Office. The limited operation of the facility and the absence of staff during winter months may have accelerated the deterioration of valves, seals, and other materials. Prior to any transfer a detailed inspection of all equipment and structures such as the museum and office buildings would be highly recommended. (Interviews, Project Operation Manager, Chief of Maintenance, and Chief of Engineering and Contracting, Bonneville Project, June-July 2008; personal knowledge of author).

Table 2-5.

Maintenance Backlog from the 2007 Portland District Annual Maintenance Report

Location	Work Required
Gates (work common to all)	Fall protection in areas employees access. No fall protection exists. Repair slide gates as required for normal operation. Repair miter gate gudgeons and stay rod anchorages. Repair or replace grating as needed. Repair or replace guardrails for all gates.
Gate #1	Monitor increased leakage between the miter block and the gate. Base plate movement shows ½", monitor continually.
Gate #3	Increased leakage along lower miter block contact area.
Gate #4	Increased movement along supporting concrete foundation. Monitor movement and identified cracking along wall and anchor plate.
Gate #5	Wicket gate operators require repairs.
Gate #6	Repair or replace operating arm bolts and nuts.
Gate #7	Cylinder pin is corroded.
Control Houses	Repair control house communication system. Repair lateral bracing for control house six.
Lock Chambers	Conduct Hydraulic Steel Structure (HSS) inspection. Repair chamber walls including planking and loose granite. Replace hydraulic piping crossing chambers. Repair downstream booms. Repair downstream access ramp and dock. Conduct chamber inspection after HSS inspection and repairs are conducted. Continue to monitor gudgeon anchors for increased movement. Monitor leakage through miter blocks and quoin blocks.
Museum	Paint structure. Repair window seals. Repair heaters. Repair roof.
Public Access	Throwable flotation devices need to be replaced/installed where missing.
Electrical Systems	Repair indicating lighting.
Hazardous Waste Storage	Housekeeping. Repair exhaust fan for flammable storage building. Cut back brush from around flammable building. Clean out flammable lockers and remove expired materials.
Storage Buildings	Housekeeping. Replace oil absorbents and oil boom.

KNOWN AND ANTICIPATED OPERATING CONSTRAINTS:

Environmental:

The long history of the paper mill operation on the adjoining property and the operations and repairs of the locks will require an investigation into the possible contamination of the grounds before property is transferred to another party. Due to the geology of the area, contamination in the lock chambers themselves is unlikely to be of great concern. Before any transfer takes place the requirements of CERCLA section 120(h) (3) (A) (ii) and B will have to be met. At a minimum, a Phase 1 record search will have to be done (see "Real Estate" above). Other concerns may be the presence of asbestos in floor tile or caulking and lead paint in the buildings. Ground contamination by lead paint scrapings is also possible. (Interview, Portland District Environmental Compliance Coordinator, 2008).

All known underground tanks have been removed as of 2006 following a notice of violation from Oregon Department of Environmental Quality. The notice was issued when it was discovered that monthly readings of soil around the tanks were not taken during the winter months when no staff was present. Old pressure treated timbers in the locks may also contain chromate copper arsenate. An internal environmental assessment was done 10 October 2006, and another one is scheduled to be done this year. Two oil spills have occurred in the past two years from the hydraulic system, one in May 2006 and another in September 2007. (Interview, District Environmental Compliance Coordinator, 2008).

Two species listed under the Endangered Species Act (ESA) migrate through Willamette Falls. These are Upper Willamette steelhead and Upper Willamette spring chinook. Three other species - Lower Columbia River chinook, Lower Columbia River steelhead, and Lower Columbia River coho may be found below the falls. Pacific Lamprey are not currently a listed species but they have been designated a species of concern. The impact on other ESA species that may need to be addressed in the event of a transfer would be Stellar Sea Lions, Coastal

Cutthroat trout, and possibly the North American green sturgeon.[15] (Interview, Fish Biologist, Portland District, 2008; Personal knowledge of author).

Prohibitions on the "take" of any ESA listed species would apply to any new owner of the locks. Consequently, it should be determined as part of the due diligence effort as to whether the locks have been subject to a previous biological assessment and consultation with NOAA Fisheries or if the project requires or has been given an ESA Section 10 "incidental take" permit. Regardless, since the transfer would constitute a federal action, the Portland District may have to make an assessment as to whether that "action" would likely have a negative impact on listed species or adversely affect their critical habitat. Although it is unlikely that the locks would be found to have such effects,[16] this is a step the District may have to go through and should not be ignored. If the District assesses a negative impact on listed fish, the Corps would need to consult with NOAA Fisheries who would then issue a Biological Opinion which may or may not affect lock operations or terms of the transfer. (Interview, Fish Biologist, Portland District, 2008; Personal knowledge of author).

Most state and federal environmental regulations will still apply to the new owner should the project be transferred. The only exclusion may be the portions of the National Environmental Policy Act (NEPA) that apply to major federal actions that might require the preparation of an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).[17] All operations and maintenance activities would still be required to comply with the regulations of federal, state and local agencies that enforce the Clean Water Act, CERCLA, the

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[15] A biological opinion on 13 Corps owned dams and hydropower facilities, the hatchery program, and 42 miles of bank protection in the Willamette Basin was completed on July 11, 2008. However, since the dam and hydropower facility at Willamette Falls is not federally owned, the Willamette Biological Opinion and its related Section 10 incidental take permits do not include the Willamette Falls Locks. (Personal knowledge of author).

[16] The operation of the locks on the eight dams in the Lower Columbia and Lower Snake Rivers have not been found to negatively affect either the status or critical habitat of listed fish.

[17] NEPA applies for projects containing a "federal nexus." In other words, if the federal government is in any way associated with a project, either through funding, land ownership, etc., then the provisions of NEPA may apply. If any federal support for Willamette Falls Locks is provided as part of a transfer agreement, a legal review will be needed to determine if a federal nexus exists.

Resource Conservation and Recovery Act, and the Endangered Species Act. (Personal knowledge of author).

Social and Cultural Resources:

In 1974 the project was placed on the National Register of Historic Places. In 1991 Willamette Falls Locks was designated as a State Historic Civil Engineering Landmark by the History and Heritage Committee of the American Society of Civil Engineers. The project was designated as a Landmark because it was the first water resource development project in Oregon. All proposed actions will need to be fully coordinated with the State Historic Preservation Officer (SHPO). The Falls are used by several Native American tribes for fishing but the operation of the locks has no apparent impact on that activity. The Locks are located on the Willamette Water Trail and provide the only water passage around the Willamette Falls. It is anticipated that transfer to an agency concerned with historic preservation and continued operation of the locks will be viewed as a very positive outcome by all if the accepting agency has a plan and the needed resources to be sustainable. (Interviews, Portland District recreation staff, 2008).

Relationship with Federal Navigation Channel:

The Willamette River federal channel was authorized by the Rivers and Harbors Acts of 3 March 1871, 13 July 1892, 3 June 1896, 25 July 1925, 30 July 1930, the Permanent Appropriation Repeal Act of 26 June 1934, and the Flood Control Act of 28 June 1938. The project dimensions are depicted in Table 2-6.[18]

The existing project is only 18 percent complete. In 1904 the reach between Harrisburg and Eugene was determined to be unworthy of improvement and no work was done. The 8 foot channel between Portland and Oregon City and the 2.5 to 3.5 foot channel between Oregon City and Albany were completed in 1939. The 2.5 to 3.5 foot channel between Albany and Corvallis was completed in 1945. The uncompleted portion was deferred in 1972 and deauthorized in

[18] The Flood Control Act of 1938 and the River and Harbor Act of 1945 also authorized converting the Willamette Falls Locks' four chambers into one chamber 400 feet long, 56 feet wide. Funding was never appropriated to do this. (U.S. Army Corps of Engineers, 1983).

1987. Until 1973 the Corps of Engineers maintained the Willamette River Navigation Channel to the vicinity of Corvallis, however, commercial log and other navigation traffic ceased to exist on the Willamette River in the early l970's. Consequently, there was no longer justification for maintaining the navigation project. (CW Digital Workbook, 2008).

Table 2-6.

Willamette River Federal Channel

River Reach	Length (Miles)	Depth (Feet)	Width (Feet)
Portland to Cedar Island	12	8	200
Cedar Island to Oregon City	1	8	150
Oregon City to Santiam River	82	6	Not prescribed
Santiam River to Albany	11.5	5	Not prescribed
Albany to Corvallis	12	2.5 – 3.5	Not prescribed
Corvallis to Eugene	Deauthorized in 1987		
Lafayette Lock and Dam	Transferred to Yamhill County in 1959		

The Corps constructed a lock and dam on the Yamhill River near Lafayette, Oregon, between 1898 and 1900 as part of the Willamette Project authorization. The project remained in operation until February, 1954 when the Corps shut it down due to lack of use by commercial traffic. The lock, dam, and associated land were sold to Yamhill County on January 16, 1959 for $10.00. Details of this 1959 transfer were not readily available.[19] The Oregon State Fish Commission subsequently determined that the locks and dam were a barrier to migrating fish and decided that a fish ladder would need to be installed for the locks to continue in use. The County determined that the expense of constructing the fish ladder was greater than the benefit of the functioning lock. Therefore, in 1965 Yamhill County dynamited the dam and removed the lock doors. The remains of the lock are now part of the Yamhill County park system, and the Yamhill

[19] The fact that the Corps built and later transferred a lock and dam on the Yamhill River was not discovered until the final draft of this report was being made. The details of that transfer may warrant further investigation.

River Channel is now usable only during higher river stages. (U.S. Army Corps of Engineers, 1983; Yamhill County Parks, undated).

The channels upstream and immediately downstream of the Willamette Falls Locks were last dredged in 1973. The Willamette channel upstream (south) of Portland has essentially ceased to be a federal priority for the past three decades. National policy and funding levels indicate that even if recreational traffic significantly increased, dredging of the channel is highly unlikely to resume. Funding for major maintenance of the locks is also a low national priority. (In 2005, only 195 navigation lock sites were funded out of a total of 212 sites owned by the US Army Corps.) Therefore if, in the future, Willamette Falls Locks is owned by another entity and they were to become impassable because of structural or mechanical failure, it is unlikely that the issue of a "barrier to navigation' would have more than local interest. Coordination with the local U.S. Coast Guard office is recommended to determine the obligations of the new owner should this occur. Alternatively, if the transfer were to take place and if the new owners were interested in either completing or expanding the current navigation channel, they would likely not be able to depend on the federal government to carry out that work.

FINDINGS AND CONCLUSIONS:

It is clear, under current Corps policy, that full federal funding for operation and even normal maintenance of Willamette Falls Locks is a thing of the past. Sufficient commercial traffic to allow prioritization of federal funding is unlikely, even if a few businesses start using the locks. Current Corps policy gives funding priority to inland navigation projects with both more than one million tons and one billion ton-miles of cargo. If the historic locks are to be kept in operation, an alternative needs to be found. The location of the locks, next to a growing, major urban area and the scenic falls, means that public recreational use is likely to be stable or increase. A renewal of the educational tours conducted in the past could add more visitations. But annual operations, routine maintenance, and deferred maintenance costs estimated at $424,000 per year (a figure that does not include potential future capital improvements) will likely exceed any amount that could be generated by recreational user fees alone.

Willamette Falls Locks has many potentially costly structural issues as would be expected by a facility that is 135 years old. However, in comparison to the facilities reviewed in the three case studies the problems are both resolvable and of smaller scope. The results of the HSS inspection will add clarity to the estimate of what level of capital investment will be required to keep the locks operational. Additional review and assessment of the buildings, pavement, and support facilities will be also required. The INCA estimate of $2.8 million for capital costs will likely grow.

One of the most critical steps in the transfer process is the resolution of the real estate survey, title, and easement issues. Current and projected federal funding has not included the cost of accomplishing resolution of known real estate issues since the priority has been the structural safety and operational needs of the facility. Environmental requirements will add to this cost if transfer occurs, but it is a process that must be done, not a barrier that could kill the transfer.

If the transfer occurs, and at some time in the future the locks cannot be kept open, the issue of becoming a barrier to the federally authorized navigation channel is not likely to be a federal issue. The Corps has not dredged the channel since 1973 immediately above or below the locks. It never has completed the initial authorized channel due to a combination of decreased usage and limited funding.

There is a good working relationship and frequent communication between the U.S. Army Corps and the One Willamette River Coalition of stakeholders. Even more importantly, both share a common goal of understanding the need to find a way to keep this historic facility from further deterioration and closure.

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CHAPTER 3
CASE STUDY #1
THE MUSKINGUM RIVER LOCKS, OHIO

INTRODUCTION:

Historic Overview:

The first permanent settlement in Ohio, Marietta, was established in 1788 at the confluence of the Muskingum and Ohio Rivers. Although the city's founders recognized the economic potential of the Muskingum River for transporting raw materials to eastern markets and brought in New England shipbuilders, the river was not navigated easily. In the spring, the river would flood and fast currents would make travel treacherous. During the summer months, the opposite was true. Many times the water levels declined to the point that river travel became impossible. (Ohio Department of Natural Resources, 2007; Ohio History Central, undated).

Local residents looked for a way to make the river more suitable for transportation. They eventually convinced the state legislature that improvements on the Muskingum would open traffic flowing along the Ohio River into the state's southeast interior. The state authorized the Muskingum River Improvement project, with construction beginning in 1836. The system was opened in 1841. The project consisted of a system of eleven locks and dams[20] that made the Muskingum River navigable from Marietta to a short feeder canal between Zanesville and Dresden, Ohio, that connected to the Ohio and Erie Canal. The Muskingum River had hand-operated locks that were designed so that a boat could pass through each lock in about fifteen minutes. (Ohio History Central, undated).

The Muskingum was part of an extensive system of canals built throughout the state. To finance the canals, the Ohio government relied on loans. The legislature established a Canal Fund Commission to regulate the costs of and securing money for the canals. But construction

[20] The history entry on the Ohio Department of Natural Resources website states that the system consisted of eleven locks and ten dams. This discrepancy has not been resolved as of this writing.

delays and cost overruns plagued much of the program. For example, canal commissioners estimated that the cost of two of the larger canal systems, the Ohio and Erie and the Miami and Erie, would collectively cost approximately $5.2 million. Once construction was completed, the two canals actually cost $41 million, $25 million of which was interest on loans. At a realized cost of between $10,000 and $12,000 per mile, these two canals alone nearly bankrupted the state government. (Ohio History Central, 2005).

Once completed, the canals still faced numerous difficulties. Spring flooding and winter freezing did serious damage to the locks, walls, and towpaths, requiring extensive repairs. But these difficulties paled in comparison to the advantages that the canals provided. For example, the cost to ship goods from the East Coast to Ohio and vice versa declined from $125 to $25 per ton. (Ohio History Central, 2005).

By the 1850s, however, many of the state's canals were already losing business to the railroads, and the state failed to devote sufficient resources to keep the canals in good repair (Ohio History Central, 2005). Although railroads had made the canal and river systems obsolete in many parts of the state, the people who lived near the Muskingum River did not have easy access to railroad lines. They put pressure on the state government to repair the locks. (Ohio History Central, undated). The U.S. Army Corps of Engineers took over responsibility for the Muskingum River system in 1887 (General Services Administration, 1958) and made a number of repairs and improvements.[21] However, the system was badly damaged during a massive flood in 1913 and repairs took five years to complete. It reopened in 1918 but never recovered the level of economic importance that it once had. (Ohio River Central, undated).

Continued decline in use resulted in a Corps decision to stop funding operation of the Muskingum in 1948. (Ohio River Central, undated). In order to keep the system open, the

[21] The Quitclaim Deed dated October 16, 1958, states that the Muskingum system was transferred by deed from the State of Ohio to the federal government on January 31, 1887. The deed implies that acceptance of the system by the Corps was authorized by the River and Harbor Act of 1886.

Corps agreed to transfer operation to local county commissioners.[22] The commissioners in turn delegated operation of specific locks to local bass fishing or boat clubs. This arrangement ultimately failed due to the lack of funds for consistent operations and upkeep. (Interview, Muskingum River Park Manager, 2008). The failure of this cooperative effort, coupled with pressure from area residents to restore the locks for recreational purposes (Ohio History Central, undated),[23] led to a process by which the system was completely transferred to the state in 1958.[24]

Description of Facilities Transferred:

The Corps' "Muskingum River Improvement"[25] project is a slack water system[26] extending from Marietta north to a point above Zanesville. Originally, the system provided about 110 miles of navigable waterway, with approximately 86 miles[27] between the lower-most and upper-most locks. At the time of transfer, the project included eleven locks and dams, many in a poor state of repair, and of which the lower-most lock (Lock #1) in Marietta was subsequently removed and the upper-most lock (Lock #11) closed. The dams are spaced about ten miles apart. Four of the locks have canals of between ½ and one mile in length, leading from and/or to the river main-stem in order to bypass river shallows at the base of their dams. The formal transfer of these locks, dams and canals occurred on October 16, 1958. The locks,

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[22] It is not clear as of this writing exactly when this cooperative arrangement began. The manager of the Muskingum River State Park, from whom this information was obtained, believes this arrangement lasted about fifteen years. If true, and given that the system was fully transferred to the state in 1958, the arrangement with the county commissioners would predate the point in 1948 at which the Corps decided to stop making further improvements.

[23] Documents explaining the extent and nature of the "pressure by area residents" have not been found online. Consequently – unlike in the Fox River case study - it is not clear what role organized interests may have played. As will be shown, that effort was essential to the successful transfer of the Fox River facilities.

[24] Records detailing the transfer process are not available online. There are, however, apparently several boxes of documents archived at the Ohio Department of Natural Resources and Historical Society which may contain such information. See "Additional References" below.

[25] The project is also referred to as the "Muskingum Improvement" project in some documents.

[26] A slack-water system is one whereby dams are used to impound water in order to increase depth along a shallow and low-gradient river (Interview, Regional Park Manager, 2008). The gradient of the Muskingum averages only 1.3 feet per mile (Ohio Department of Natural Resources, undated).

[27] Some references cite the distance as 88 miles.

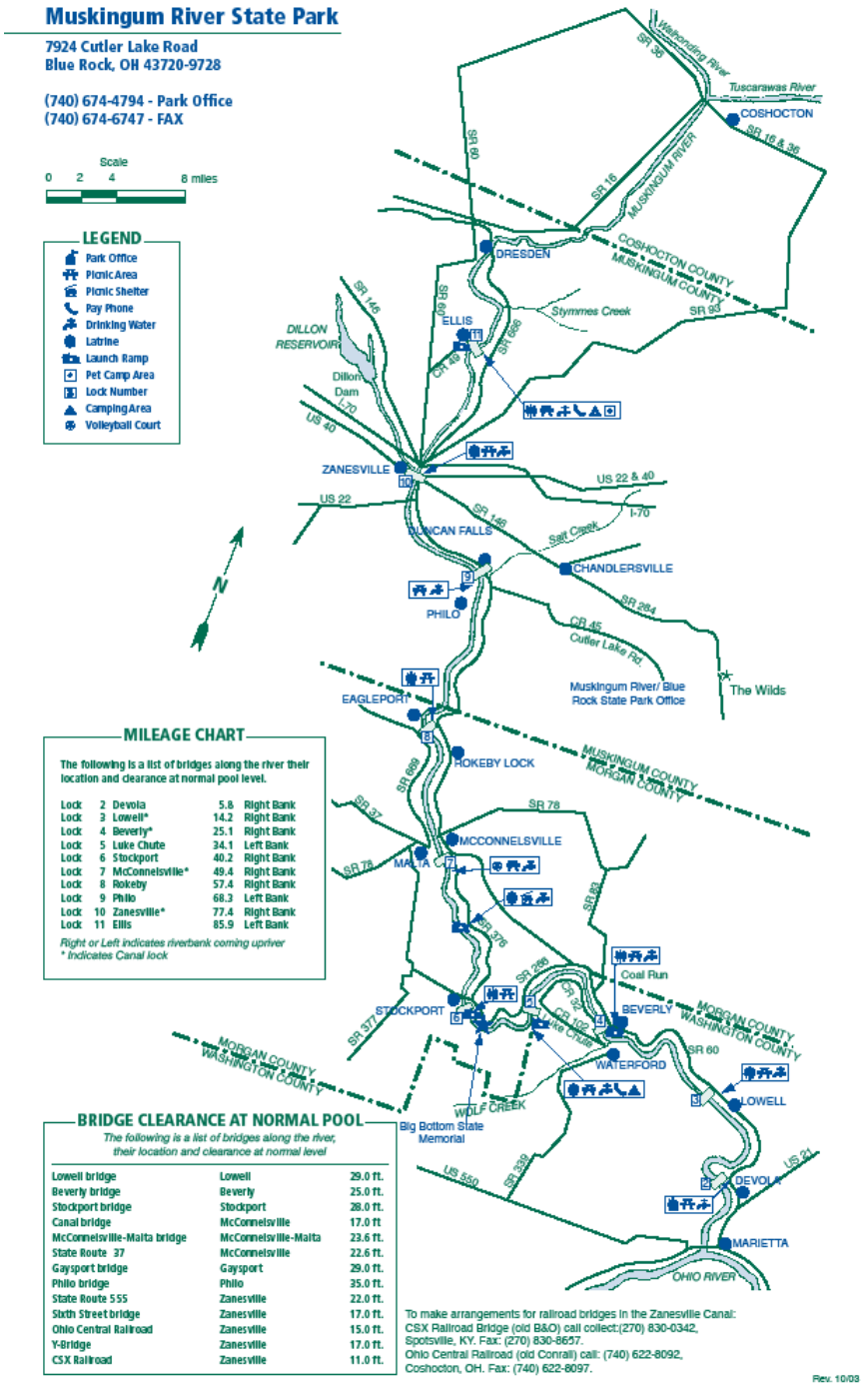
constructed of sandstone block and timber, remain hand-crank operated as they were when the system first opened in 1841. (Ohio Department of Natural Resources, undated; Interview, Muskingum River State Park Manager, 2008). The transfer included "all the lands and tenements, with the rights and appurtenances appertaining thereto, now belonging to the Grantor [the Corps]...and used for canal and other purposes" (General Services Administration, 1958). The system is open for navigation from May through September and is heavily utilized, averaging about 6000 lockages per operating year. (Interviews, Real Estate Manager for Parks and Recreation and Muskingum River State Park Manager, 2008). A diagram of the system is shown at Figure 3-1.

Assessment of Transfer Success:

The transfer occurred fifty years ago. Consequently, and unlike the other case studies reviewed in this report, the Muskingum offers an extended history of post-transfer operations experience. In general, interviewees characterized the transfer as a success. One described it as a "win-win-win: good for the Corps, good for the state, and good for the public." Another described his feelings for the transfer as the feelings "of a proud parent for a special child." Much of this pride stems from the unique and historic nature of the hand-operated locks and strong public support for the state parks system. The system is described as "quite a tourist draw" as a historic and cultural part of the region's past, and enjoys strong support from the public. (Interviews, Real Estate Manager for Parks and Recreation and Regional Park Manager, 2008). It is actively promoted on the Ohio Department of Natural Resources (DNR) website (see, for example, the Muskingum River State Park web site at: http://www.dnr.state.oh.us/parks/tabid/773/Default.aspx).

Figure 3-1.

Muskingum River State Park



Retrieved from the Ohio Department of Natural Resources web site on August 27, 2008 at http://www.dnr.state.oh.us/Portals/2/parkmaps/muskingumparkmap.pdf.

Despite this widespread support, the Muskingum system is beginning to strain due to a lack of funding in recent years. There are ongoing maintenance challenges in operating a 167-year old system, and funding has not been sufficient to keep up with needed work. There have been reductions in park staff and lock operating hours. The northern most lock has been closed due to lack of use. A 2001 report estimated a maintenance and repair backlog of about $35 million (Interview, Muskingum River State Park Manager, 2008). Although there are no plans to close the system at this time, one interviewee opined that, due to the high cost of operations and maintenance, the state would probably willingly transfer it to another owner if one could be found. (General Services Administration, 1958; Interviews, Regional Park Manager, Muskingum River State Park Manager and Muskingum River Park Engineer, 2008).

Overview of Transfer Funding, Staffing, and Technical Activities:

There are no documents filed online regarding events leading up to the transfer in 1958. There is, however, an apparent wealth of documents filed at the DNR and in the archive and library of the Ohio Historical Society. See "Additional References" below for the storage locations of these records.

TRANSFER ISSUES:

Roles, Relationships, and Responsibilities - Pre-transfer:

There are no documents filed online regarding the events, actors, or issues leading up to the 1958 transfer, and we have been unable to locate anyone who worked or is working for the Corps or state who were personally involved in the transfer process. Presumably, any records of these events are included in the archives of the DNR and Ohio Historical Society. See "Additional References" below.

Roles, Relationships, and Responsibilities – Post-transfer:

The key post-transfer institutional actors are the Corps of Engineers, the state's Department of Administrative Services and DNR, the subordinate divisions and offices of the DNR, the Muskingum River Advisory Council, and the Muskingum Watershed Conservancy District.

Corps of Engineers: The Corps transferred all operational responsibility and liability for the main-stem Muskingum dams, locks, canals, and related facilities in 1958. It retained responsibility for flood control, which is provided by dams constructed on Muskingum tributaries (see "Muskingum Watershed Conservancy District" below). The main stem dams have no flood control storage capacity. The Corps also retains responsibility for maintenance dredging of the main stem Muskingum River. Relations with the Corps are described as "good" to "very good," especially with regard to Corps responsiveness to technical questions. There is frustration, however, with the lack of funding for main stem dredging which is precluding opening the system to larger watercraft. (Interviews, Muskingum River State Park Manager, Regional Park Manager, and the Muskingum River Engineer, 2008).

State Agencies: The Muskingum navigation facilities, like all state facilities, are "owned" by the Department of Administrative Services (DAS). DAS assigns complete jurisdiction for the state parks to DNR, who in turn delegates it to the Division of Parks and Recreation. DAS does not apparently have any role in system operations, maintenance, or oversight. Technical support, such as engineering and real estate services, are provided by offices at the departmental or division level. The parks are organized by region, with individual state park managers under the supervision of a regional park manager. (Interviews, Real Estate Manager for Parks and Recreation, Regional Park Manager, and Muskingum River Engineer, 2008).

Advisory Council: The state created the Muskingum River Advisory Council through legislative action in 2003. It consists of 27 members. Two members are from the state house of representatives; two members from the state senate; four persons are appointed by the governor as "interested in the development of recreational and commercial uses of the Muskingum River"; two representatives from DNR, appointed by the director; one representative each from the Department of Development, the state's Environmental Protection Agency, the state's Department of Transportation, and the Ohio Historical Society, each appointed by their department's director; twelve representatives divided between the four counties through which the Muskingum River flows, each appointed by a county commissioners or mayor of the major towns along the river; and one representative from the Muskingum Watershed Conservancy

District, appointed by the district's board of directors. Each member serves at the pleasure of his or her appointing authority. (Ohio Revised Code, Chapter 1501, section 25, 2003).

The council elects a chair and vice-chair from among its members and one of the DNR representatives serves as council secretary unless a majority of the council determines otherwise. The council meets once each year. Its purpose is to take testimony from residents of the Muskingum area, provide an annual report to the state general assembly with recommendations for improvements and estimates of cost. The council is staffed from the DNR as needed. The council may seat committees and study groups and may also provide coordination, aid to civic groups, information and planning aid, and updated information to the Corps as to conditions on the river. (Ohio Revised Code, Chapter 1501, section 25, 2003). In essence, it is a coordination and information providing body, with apparently little directive oversight for fund raising authority.

Appointment to the council is considered "very prestigious", and the council is seen as an advocate for the system to the state legislature. The council has study groups monitoring water quality and coordinating stream clean-ups. (Interviews, Muskingum River State Park Director and Muskingum River Park Engineer, 2008). Interviewees, however, hinted at some frustration in that the council has not been successful in obtaining needed funds.

Muskingum Watershed Conservancy District (MWCD): MWCD was formed in 1933. The original mandate for MWCD was to raise the necessary funds and then plan, build and administer flood control and conservation projects. Construction of 13 earthen dams and one concrete dam was completed by 1938. The dams creating the reservoirs for flood water retention were placed on the main tributaries of the Muskingum River; the main stem Muskingum River dams have no flood storage capacity. Responsibility for flood control was transferred to the U.S. Army Corps of Engineers with the Flood Control Act of 1939. MWCD is still responsible for conservation and recreation on its lands and waters, and works with the U.S. Army Corps of Engineers to assist with flood control. MWCD has developed public camping areas, parks, lakes, marinas and youth camps on the land around its reservoirs. (Muskingum Watershed Conservancy District, 2002).

MWCD activities are intertwined with the operation of the Muskingum River State Park. Interviewees indicated that the relationship with MWCD is very important although the exact nature of the relationship between the organizations is not clear. There are several histories and records of the MWCD on file with the Ohio Historical Society.

Historical, Cultural, Environmental, and Other Operational Constraints:

The state made the decision at the time of transfer to operate the system as it did when originally opened in 1841. Consequently, all of the locks are hand operated – a point of real pride among the system's park managers and staff. The system is registered in National Register of Historic Places and is pending acceptance as a National Historic Landmark. The system is recognized as a national water trail. All repairs and rehabilitation work are conducted in accordance with the original system plans and specifications, documents described as "invaluable" in maintaining the historic character of the facilities. (Interviews, Regional Park Manager, Parks and Recreation Real Estate Manager, and Muskingum River Engineer, 2008).

There are no known environmental issues that affected the transfer, although it should be noted that the transfer occurred before most of the nation's current environmental laws were passed. The only environmental issue mentioned by interviewees affecting current operations was near Zanesville. Zanesville is an industrial town, and sediment in the canal leading to the dam has been heavily contaminated by runoff from the surrounding area. The contaminated sediment creates disposal problems for material dredged from the canal bottom. The pollution source, however, is not directly related to the operation of the navigation system. (Interview, Real Estate Manager for Parks and Recreation, 2008).

Liability Arrangements and Issues:

The state retains full liability for ownership and operation of the locks, dams, canals, and related facilities. The Corps retains responsibility for the dredging and maintenance of the Muskingum River mainstem (Interview, Muskingum River State Park Manager, 2008) and basin-wide flood control (Muskingum Watershed Conservancy District, 2002).

Required Real Estate Actions and Issues:

The Muskingum system was transferred by a quitclaim deed executed by the Administrator of the General Services on October 16th, 1958. There is no one currently associated with the system who was involved in the transfer process. Presumably, documents related to the real estate aspects of the transfer are included in the archives of the Historical Society and DNR. See "Additional References" below for the location of those records.

Jurisdictional Authorities and Permitting:

Public law 84-996, enacted by Congress on August 6, 1956, provided that "whenever the Secretary of the Army, upon recommendation of the Chief of Engineers, determines that the said eleven (11) lock and dam structures in the Muskingum River no longer economically serve the purpose for which they were constructed or acquired, the Administrator of General Services for the Government is authorized to transfer said structures, including real property acquired therefor [sic], to states or political subdivisions thereof." This law also authorized federal appropriations in support of the transfer. (Transfer Agreement, 1958). Presumably, Congressional authority for the transfer was contained in a River and Harbor Act (forerunner of the Water and Resource Development Act), although this has not been confirmed. The only other federal permitting issue discovered during the course of this study was the need for the state to obtain dredge material disposal permits from the Corps of Engineers for dredging of the canals (Interview, Muskingum River Engineer, 2008).

The state has jurisdictional responsibility for the operation and maintenance of the navigation system. The Corps retains responsibility for flood control operations in the Muskingum tributaries and maintenance of the Muskingum River mainstem. The Muskingum Watershed Conservancy District has jurisdiction for recreation and other activities in the tributaries. It is likely that there are other state water quality permitting and jurisdictional processes in place to provide water resource coordination in the basin, but they were not discovered online or during the interview process in the course of this study.

System Usage:

System lockages for recent years are shown in Table 3-1 (data provided via email by the Muskingum River State Park Manager, 2008). Users consist mostly of privately owned recreational craft and a few tour boats. (Interview, Muskingum River State Park Manager, 2008). There have been recent inquiries from a local quarry operator who would like to begin barging sand and gravel through the system, although supporting such traffic would require renewal of Muskingum River dredging by the Corps of Engineers. (Interview, Regional Park Manager, 2008).

Table 3-1.

Muskingum River Annual Lockages

Year	**Lockages** [28]
2001	8,147
2002	8,250
2003	5,215
2004[29]	2,830
2005	5,531
2006	5,322
2007	5,931
Average per Year	5,890

Funding Arrangements and Responsibilities:

Federal Funding: The federal government estimated that "the cost of restoring drainage and otherwise preparing said eleven lock and dam structures for abandonment" would

[28] A "lockage" is defined as one boat passing once through one lock. The numbers shown are the annual totals for the nine currently operating locks in the Muskingum system.

[29] The low usage in 2004 was attributed to the impact of storms associated with the record-setting hurricane season of that year (Interview, Muskingum River Engineer, 2008).

cost $235,000.[30] Public law 84-996 authorized a payment of that amount from appropriated civil works funds to the state of Ohio at the time of conveyance. This amount could be used for abandonment or rehabilitation, operation, and maintenance of the structures, although it was "understood and agreed" by the parties that this amount was insufficient to accomplish full system restoration. Consequently, the state reserved the right to seek additional funds from Congress in the future. (Transfer Agreement, 1958).[31] The state has requested that the Corps dredge the mainstem of the Muskingum River to maintain the river channel, but, due to funding constraints, the Corps has been unable to meet those requests in recent years. (Interviews, Muskingum River Park Engineer and Muskingum State Park Manager, 2008).

State Appropriated Funds: State park funds are managed through state appropriations allocated to a centralized, state-wide capital investment budget and individual agency budgets. Capital investments in the Muskingum system have averaged $2 – 4 million and are managed (as is the capital program for all parks) by the Department of Natural Resources' Office of Engineering. Routine operations and maintenance for the Muskingum are funded through the state Department of Natural Resources, who in turn funds the Division of Parks and Recreation, who in turn funds the state's parks. Although some state agencies enjoy an additional source of dedicated revenue, such as those generated though the sale of hunting and fishing licenses, the Muskingum system does not (see "User Fees" below). Funding is therefore subject to competing priorities at the state, departmental, and divisional levels. Routine maintenance for the Muskingum system facilities have been funded at about $15,000 - $20,000 per year. Operations costs are funded separately.[32] In general, this system has apparently worked over the past fifty years. In recent years, however, and probably due to the downturn in the state's economy, this funding has not been fully adequate, resulting in cutbacks in staff at the locks, a reduction in

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[30] This amount is in 1956 dollars. Assuming a discount rate of 3.5%, this equates to about $1.4 million in 2008 dollars.

[31] It is not clear as of this writing whether additional funds were ever formally requested or provided.

[32] State parks in Ohio are organized by region. The Muskingum River State Park's region has an operations and maintenance budget of about $2 million per year, which covers four parks (including the Muskingum). Operations make up $700,000 of this $2 million and pays for a staff of about 80 full and part-time employees and equipment, supplies, and other operating costs for all four parks. The Muskingum River State Park staff consists of two full time employees and ten part-time park technicians. (Interview, Regional Park Manager, 2008). A specific cost figure for the Muskingum River State Park operations was not readily available.

operating hours, and generation of about $35 million in backlogged maintenance. (Interviews, Muskingum River State Park Manager and Muskingum River Park Engineer, 2008).

User Fees: The Muskingum River State Park charges user fees for lockages. Rates are $5.00 for a single, one-way lockage during normal operating hours and $25.00 for one-way lockages outside of normal hours (which can be arranged by appointment). Weekend passes, allowing unlimited use, can be purchased for $20.00. Annual passes are also available, varying by boat size and ranging from $15.00 to $50.00. (Ohio Revised Code, Chapter 1501, section 41-2-30, 1995). These rates were set in 1995 and, although periodically reviewed, have not been raised since (Interview, Muskingum River State Park Manager, 2008). Revenue is also raised by concession fees (Interview, Muskingum River Park Engineer, 2008). All revenue generated by usage fees and concessions accrue to the state's general fund and are not dedicated to the expenses of the Muskingum system (Interviews, Muskingum River Park Manager and Muskingum River Park Engineer, 2008).

Closure and Abandonment Provisions:

The Transfer Agreement allows the state to either "assume responsibility of restoring drainage and preparing the said lock and dam structures for abandonment or in its discretion to rehabilitate and operate and maintain said structures, whichever the State may deem to be in the best interest of the State." The $235,000 provided by the federal government to the state was authorized to be used for either purpose. (Transfer Agreement, 1958, p. 2).

The state has no plan for abandonment, should it be necessary. The Ohio Governor has been quoted as saying that there will be "no closure of parks" (Interview, Muskingum River State Park Manager, 2008).

Relationship of the Transferred Property to the Larger Navigation System:

The Corps transferred ownership and all responsibility for the locks, dams, canals, and related lands and facilities to the state. However, the Corps retained responsibility for maintenance and dredging of the Muskingum River mainstem. The Corps has not, however, dredged the river in a number of years. Consequently, rather than the state's operation of the

system being constrained by requirements of the Corps navigation system, the opposite is true. State plans to attract larger boats and restore some commercial traffic to the system are constrained by the lack of maintenance dredging and resulting shallowness of the Muskingum mainstem. (Interviews, Muskingum River State Park Manager, Regional Park Manager, and Muskingum River Park Engineer, 2008).

LESSONS LEARNED:

The following are recommendations provided by state officials involved with the operation of the Muskingum River in regard to the transfer of similar facilities:

- The system can be "quite a tourist draw" as an historic and cultural part of the region's past (Interview, Regional Park Manager, 2008).

- There are day-in and day-out maintenance challenges in maintaining a 160-year old system. Having access to original plans and specifications is essential to preserving the historic nature of the facilities. It is also very expensive to maintain. (Interview, Regional Park Manager and Muskingum River Engineer, 2008).

- The state had hoped for federal funds once the system was adopted into the National Register of Historic Places. Such funds have not been forthcoming, partly due to tighter budgeting and partly due to the two-year processing time for grant requests. (Interview, Regional Park Manager, 2008).

- The receiving entity should insist on a thorough assessment of the state of repair and safety of the structures as part of the pre-transfer process. The receiving entity should negotiate with the federal government for sufficient funds for initial restoration and rehabilitation. (Interview, Muskingum River Engineer, 2008).
- (Interview, Muskingum River Engineer, 2008).

- The two largest issues facing the Muskingum are mainstem dredging and locks funding (Interviews, Muskingum River Engineer, Muskingum River Park Manager, 2008).
    - If the facilities transferred are part of a larger navigation system that will remain under the Corps' jurisdiction, insist on a clear understanding of how the Corps plans to maintain that part of the system for which they remain responsible (Interview, Muskingum River Engineer, 2008).
    - The receiving entity should carefully assess and arrange for dedicated funding. Relying solely on state appropriated funds may result in funding shortfalls during economic downturns. (Interview, Muskingum River Park Manager, 2008).

FINDINGS AND CONCLUSIONS:

A summary of the lessons learned from this case study as may be relevant to the Willamette Falls Locks transfer follows:

- Locals attempted to run system through some form of operations agreement with the Corps. This effort failed, leading to efforts to acquire ownership by the state.

- State did not obtain sufficient funds to cover full restoration and rehabilitation of the system from the Corps.

- Funding for the Muskingum River State Park is derived from state general appropriations. The Park's share of funds is allocated from the appropriation for the Department of Natural Resources. It is, therefore, subject to cuts and uncertainty depending on the nature of the state economy and other state priorities.

- Nominal usage fees were initiated in 1995. Up until then, the system had been free. The fees generated a public backlash, and have not been increased since. The fees are insufficient to cover the costs of operations and maintenance. Regardless, the fees are not dedicated to the Muskingum system, but go into the state's general fund.

- The operators of the system take great pride in the historical nature of the Muskingum system. The system is popular, enjoying an average of about 7000 lockages per year.

- The state acquired all of the Corps' records, files, specifications, construction drawings, and other documents regarding the Muskingum system. Interviewees state that having ownership of those documents has been invaluable in designing and carrying out maintenance and rehabilitation projects.

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CHAPTER 4

CASE STUDY #2

KENTUCKY RIVER LOCKS, KENTUCKY

INTRODUCTION:

Historic Overview:

The Kentucky River flows down the western slope of the Appalachians, cuts through towering limestone palisades across central Kentucky, passes historic Boonesborough and emerges from the hills at Frankfort, Kentucky's capital, a total of almost 255 miles from its Three Forks sources to the Ohio River, midway between Cincinnati and Louisville. It drains an area of approximately 7,000 square miles and is a primary water source for Central Kentucky. (Johnson and Parrish, 1999).

By 1805, flatboats carrying salt and iron to Lexington, Frankfort, and Louisville had begun navigating the Kentucky from its South Fork and Red River tributaries. The Red River charcoal iron furnaces shipped pig iron downriver in flatboats called "iron boats," and cannon balls from these iron works supplied General Andrew Jackson and the Kentuckians at the Battle of New Orleans. The trade later became a justification for building locks and dams on the Kentucky River. (Johnson and Parrish, 1999).

In 1836 the Commonwealth began building locks and dams on the Kentucky to provide reliable year-round navigation from its mouth to its sources at the Three Forks. By 1842, with only five of the state's locks and dams planned on the Kentucky completed, less than half the river's length was navigable. The Commonwealth funded the operation of its locks and dams by collecting tolls until the dams collapsed and failed in 1876. At the direction of Congress, the U.S. Army Corps of Engineers restored navigation on the lower Kentucky by 1883, and then built additional locks and dams to extend the slackwater navigation system farther upstream. During the next thirty years, the Corps built nine more locks and dams, increasing the total number to fourteen. (Johnson and Parrish, 1999).

Concurrent with completion of the Kentucky River development in 1917, the steamboat commerce it was designed to support came to an abrupt end. The Kentucky River's hydroelectric power potential was developed in part and projects were completed to reduce damages caused by flooding. Recreation and water supply grew in importance as local communities withdrew water from the reservoirs behind the dams. (Johnson and Parrish, 1999).

After World War II, commerce on the river became more sporadic and flood damage reduction became the Corps' top priority. By the 1950's, the focus on the Kentucky's water resources shifted away from navigation to water supply, water quality, and recreation. As commerce on the upper river died, the Corps closed locks 5-14 and advocated a transfer of the locks to the state. This transition proved to take as long as the process to fund and build them. (Johnson and Parrish, 1999).

As early as 1951, the Corps proposed closing the locks upstream of Frankfort, but intense political opposition and occasional coal shipments thwarted that proposal. Coal shipments ceased completely in 1975. Finally, the Corps closed the locks above Frankfort in 1981. Public outrage at the 1981 closure by recreational boaters and half a million water supply users resulted in the Corps leasing the locks to the Commonwealth for continued operation during the recreation season, an arrangement that continued into the 1990's. During this time, the Corps and the Commonwealth developed a somewhat ironic plan: the Corps operated the oldest locks (1-4), built by the state in the first half of the 1800's, while the Commonwealth operated the relatively newer locks built by the Corps on the upper river (5-14). (Johnson and Parrish, 1999).

When the Corps announced in 1951 that it would close locks 8-14 because there was "no commercial navigation on the Upper Kentucky at present and none is expected in the foreseeable future," state opposition quickly organized. The Kentucky River Development Association was formed in Lexington to fight the closure. The influential Hazard Coal Operations Association asked the powerful Kentucky Congressional delegation to thwart the Corps' plans. The Association also announced plans to ship one million tons of coal annually by rail to Bellepoint, near Lock 14, for transshipment by barge. In addition to these complaints from commercial river users, concerns were raised about future water supply for the Bluegrass area. When the House of Representatives omitted funding for the Kentucky River Locks in their 1952 bill, the Kentucky

Senators restored the funding in the Senate version of the bill. The Corps briefly closed the locks in August 1951, until the 1952 appropriations became law and funding was made available in October. (Johnson and Parrish, 1999).

Coal operators quickly found boats and started shipping coal down the Kentucky in 1952. A barge-loading facility was built on the river at Beattyville, and an unloading dock was constructed at Clays Ferry. A second coal barging operation began in 1953 to ship 5,000 tons of coal a month to steam electric plants and whiskey distilleries. By 1958, annual tonnage had increased to 317,000 tons. As coal commerce grew, Congressman Carl Perkins proposed modernization and enlargement of the Kentucky navigation system to attract industry and provide jobs. His proposal found little support in Congress. (Johnson and Parrish, 1999).

Commercial traffic in general and coal in particular gradually declined from the peak in 1958. By 1975, the last commercial coal barge had transited through the upper river locks. Only an occasional barge of bridge trusses or industrial equipment passed through the locks after that. In contrast, recreational boating increased, peaking at 12,400 lockages in 1970. But in 1978, a flood swept away almost all the docks and marinas that served the recreational traffic. The flood damage, coupled with competition for recreational opportunities offered by completion of several new Corps lakes, reduced recreational lockages that year to 6,400. (Johnson and Parrish, 1999).

In 1977 - the year before the flood - the Corps again considered closing the locks above Frankfort. The district estimated that it cost an average of $160 for each boat passing through Locks 1-4 and $566 for each boat locking through Locks 5-14. The state once again declined to consider operating the upper locks and in 1979 the Corps proposed to cease operating them in order to save $1 million annually. As an alternative, the Corps proposed giving the structures to the communities that drew their water supply from the navigation pools. The Corps warned that the “failure of these structures could severely affect the water supply of Central Kentucky which is already projected to be inadequate to meet future needs during drought years.” (Johnson and Parrish, 1999).

At a Corps meeting in Lexington in 1980, more than 400 people unanimously protested the closure proposal (State Takes Control of 10 Locks and Dams on Kentucky River, 1985). However, in 1981, when President Regan severely cut the 1982 federal budget, funding for the Kentucky River was eliminated. The Corps announced that it would cease operating locks 4 and 5 on October 1, 1981. (Johnson and Parrish, 1999).

The Commonwealth immediately established the Kentucky River Task Force to study the issue. Meanwhile state and county officials and the Kentucky Congressional delegation aggressively protested the decision. In response the Assistant Secretary of the Army for Civil Works (ASA(CW)) reassessed the closure and provided funding for limited operation during the 1982 recreation season. He asked state and county officials to develop a plan for future operations by either the state or local governments. (Johnson and Parrish, 1999).

The Corps again closed the upper locks in September 1982 as the Commonwealth's task force completed its interim study. The task force urged the Corps to continue its operation of Locks Nos. 1 through 4 and to undertake repairs at Locks and Dams Nos. 5 through 14 to ensure against their failure during negotiations with the state. It also recommended that the state government consider leasing the upper locks for summer recreation operation. The upper locks remained closed during the protracted negotiations until 1984, when the Kentucky legislature provided initial funding to operate the locks under a leasing arrangement. In November 1984, after receiving the Governor's word that the Commonwealth would consider taking ownership of the upper locks, the ASA(CW) released the funds needed to repair the locks for resumed operations. (Johnson and Parrish, 1999; Interviews, Louisville District Real Estate Manager, 2008).

In 1984, the Kentucky General Assembly authorized the Natural Resources Cabinet to negotiate the system's acquisition and appropriated $325,000 for two years of routine maintenance and operation. The legislature refused to appropriate any money for repairs needed to reopen the locks, saying that the repairs wouldn't have been needed if the Corps had not closed them. The Corps agreed to spend $500,000 to repair the locks. Under the three-year agreement, the state and the Corps shared major maintenance expenses. (State Takes Control of 10 Locks and Dams on Kentucky River, 1985).

On May 21, 1985 the Governor and the District Engineer met at Lock Number 5 to inaugurate state operations of Locks 5-14 under a lease agreement. The agreement called for the state to fund recreation season operations and routine maintenance until the state accepted ownership of the locks and dams. The Kentucky Water Patrol initially managed the lock system. Under state management, the recreational traffic increased to 5,085 boats by 1986, as compared to 3,290 boats during Corps operations in 1979. In 1986, Congress finally authorized the disposal of the Kentucky River Locks, and the Commonwealth created the Kentucky River Authority to manage lock operations. The Authority was also given bonding, regulatory, and eminent domain powers. (Johnson and Parrish, 1999; Interviews, Louisville District Real Estate Manager, 2008).

An extended drought occurred in the Kentucky Basin in 1988. On July 8 the Governor declared a state of emergency. Locks 5-14 were closed to hold water for the communities that relied on the navigation pools for water supply. As a result of the drought, Mayor Scotty Baesler of Lexington formed a Kentucky River Basin Steering Committee with funding from state, local, and private sources to study regional water supply improvement. The committee's recommendations included strengthening the locks and dams on the Kentucky River as a short term water supply enhancement. They also recommended that the state expand the responsibilities of the Kentucky River Authority to include water resources management. In 1988 Governor Wallace Wilkinson signed legislation to authorize the eventual acceptance of the ownership of the locks and dams. In 1990 the state gave the Kentucky River Authority broader powers to manage the valley's water resources with funding derived from the assessment of fees on communities using the river for water supply. (Johnson and Parrish, 1999).

Years of acrimonious disputes and lawsuits between the state and the Corps finally started to wane when they agreed to an orderly transition. The Corps agreed to fund repairs and improvements to make the dams more dependable for water supply. The powerful Kentucky Congressional delegation obtained a $5 million appropriation in 1992 to fund the Corps' strengthening of the dams. The Kentucky delegation continued providing Congressional earmarks to continue funding the repairs through 2000. (Johnson and Parrish, 1999; Interviews, Louisville District Real Estate Manager, 2008).

The Kentucky River Authority, funded by surcharges on water withdrawal, initiated a number of programs. The Authority worked closely with the Corps to continue operations of the locks during the recreation season and to plan the transition of Locks 5-14 to the state. It planned for future use and recreational development at each of the locks and proposed developments to enhance water supply during droughts. (Johnson and Parrish, 1999).

The funding provided by Congress was specifically appropriated to repair the locks to support water supply, not to repair the lock gates. As the gates deteriorated, the Kentucky River Authority had difficulty keeping the locks open during the summer recreation season. The Chairman of the Authority, Thomas Dorman, estimated that the operations and maintenance costs were approximately $250 for every boat passing through the locks. The Corps and the state continued with the transition, however, and in 1996 Lock Number 10 was transferred to the state consistent with the original plan to transfer each lock separately. (Johnson and Parrish, 1999).

In 1999 the transfer deed packages for Locks 5-9 and 11-14 were prepared by the Corps and provided to the Kentucky River Authority for comment and approval. Remedial construction and repairs continued over the following years as additional funding was provided by Congressional earmarks. Negotiations continued with the Commonwealth until November 2005 when the final deed package was submitted to Corps HQ for approval. The Assistant Secretary of the Army for Installations and Environment (ASA (I&E)) signed the quitclaim deeds in February 2006 and the Kentucky River Authority signed the deeds in April 2006. Final recording in the appropriate counties was completed in September 2006. (Interviews, Louisville District Real Estate Manager, 2008).

Description of Facilities Transferred:

The navigation system of the Kentucky River originally stretched for almost 255 river miles and consisted of a slack water system of fourteen locks and dams that were built between 1836 and 1917. Locks and dams 1 through 8 were built prior to 1900. These early dams were originally timber crib structures, consisting of an outside frame of timbers filled with dirt and rock. The original locks were stone masonry. Locks and dams 9 through 14, built after 1900, were constructed of concrete. The system is diagrammed at Figure 4-1.

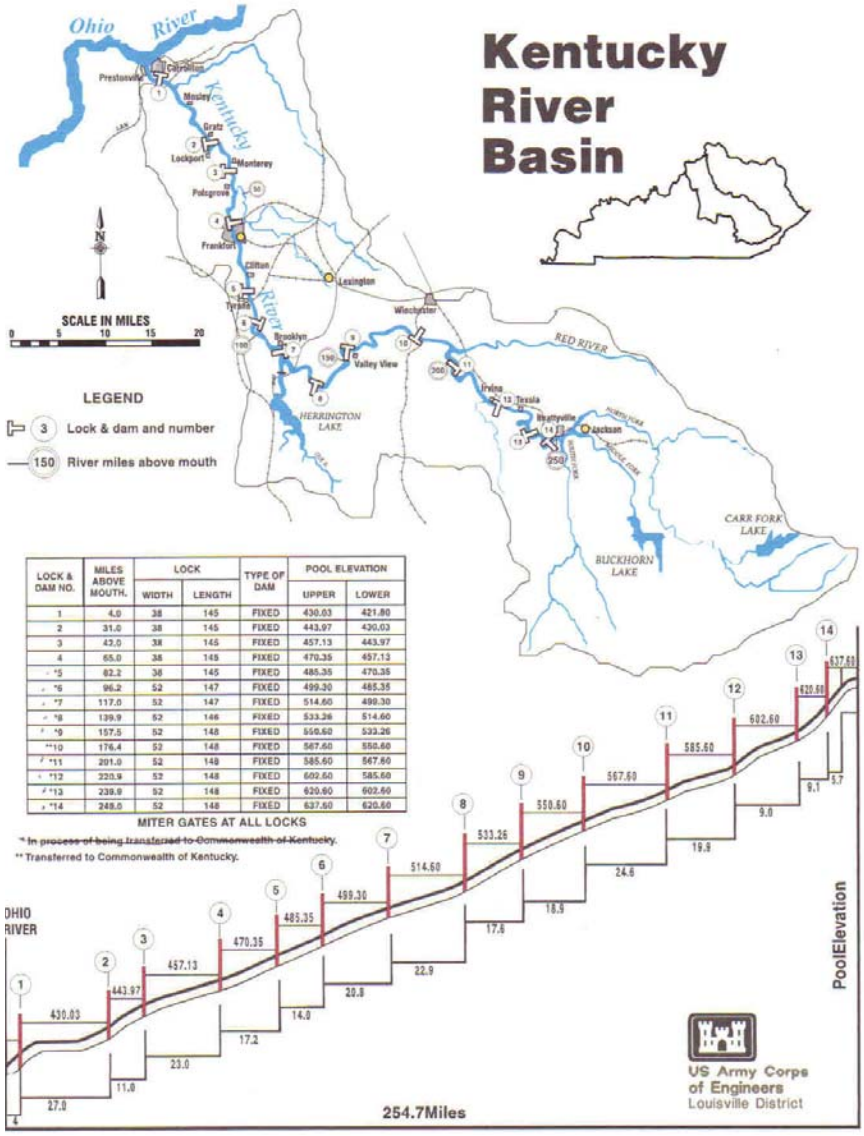
Assessment of Transfer Success:

Representatives of both the Corps and the Kentucky River Authority consider the transfer a success after decades of conflict, negotiation, and the expenditure of $14 million in capital improvements. However, the ongoing maintenance and operation has been more costly than the Commonwealth anticipated and the condition of the locks still suffers from inadequate funding. In 2008, only Lock and Dam 4 is open for recreational traffic from Memorial Day until September 1st. All other locks are in need of structural repair and remain closed until further notice.

Figure 4-1.

The Kentucky River Navigation System

(From Johnson and Parrish, 1995, p. 3.)



LOCK & DAM NO.	MILES ABOVE MOUTH.	LOCK WIDTH	LOCK LENGTH	TYPE OF DAM	POOL ELEVATION UPPER	POOL ELEVATION LOWER
1	4.0	38	145	FIXED	430.03	421.80
2	31.0	38	145	FIXED	443.97	430.03
3	43.0	38	145	FIXED	457.13	443.97
4	65.0	38	145	FIXED	470.35	457.13
*5	82.2	38	145	FIXED	485.35	470.35
*6	96.2	52	147	FIXED	499.30	485.35
*7	117.0	52	147	FIXED	514.60	499.30
*8	139.9	52	146	FIXED	533.26	514.60
*9	157.5	52	148	FIXED	550.60	533.26
**10	176.4	52	148	FIXED	567.60	550.60
**11	201.0	52	148	FIXED	585.60	567.60
**12	220.9	52	148	FIXED	602.60	585.60
**13	239.9	52	148	FIXED	620.60	602.60
**14	248.0	52	148	FIXED	637.60	620.60

TRANSFER ISSUES:

Roles, Relationships, and Responsibilities - Pre-transfer:

From the early 1950's until the 1990's, the relationship between the Corps and the Commonwealth was strained at best concerning the Kentucky Locks and Dams. From the beginning, when the District Engineer brought up the idea of abandoning the locks in 1951, the state strongly criticized the Corps for its attempt to end the federal role in providing an economic stimulus to a comparatively depressed area. Only after three decades did the state start to seriously consider taking over the operation and maintenance of the navigation system. But they continued to distrust the Corps. This tense relationship between the Corps and the state extended the length of time it took to reach a level of cooperation necessary to accomplish the transfer. The issues were exacerbated by strict requirements from the state's environmental agency for lead mitigation and the State Historic Preservation Office for documentation of the facilities that were to be modified or removed.

The powerful Kentucky Congressional delegation was able to obtain both authority and appropriations in order to provide full federal funding to accomplish dam repairs and pay for all administrative, real estate, and environmental costs associated with the transfer from 1993 through 2000, for a total of $14 million in four separate appropriations. It should be noted, however, that the focus was on protecting water supply for the region. Navigational repairs were not covered in the $14 million.

The Kentucky River Authority (KRA or the Authority) was first established by the Kentucky General Assembly in 1986 to take over operation of the Kentucky River Locks and Dams 5 through 14 from the Corps of Engineers. Following the drought of 1988, the Authority was given a mission to protect and improve the waters of the Kentucky River through environmental management of the entire watershed. This was the first effort by the Commonwealth of Kentucky to protect a major water resource through watershed management. Watershed management recognizes that the focus of the river should not just be on the water flowing through it, but also including human activities that affect the amount and quality of

water that flows through the basin. (Johnson and Parrish, 1999; Kentucky River Authority, 2008).

The Kentucky River Authority included the Commonwealth's Secretary of Natural Resources and ten representatives from the river valley. Among these were a mayor, a county judge, an engineer, a water quality expert, and representatives of counties bordering the river. Thomas Dorman became the Authority's chairman and served through the 1990s, implementing a broad agenda for managing Kentucky River resources. (Johnson and Parrish, 1999; Kentucky River Authority, 2008).

The KRA mission statement states that, "The Kentucky River Authority will maintain and manage water resources of the Kentucky River Basin to provide a clean and reliable water supply for the citizens of the Basin. The Kentucky River Authority will provide leadership and a common forum for all stakeholders of the Kentucky River Basin in order to promote the highest and best uses of the water resources of the Kentucky River Basin." The Authority's functions include managing and maintaining an adequate and reliable supply of water; preserving and improving water quality; providing regional leadership among stakeholders; and providing and promoting recreational services. (Johnson and Parrish, 1999; Kentucky River Authority, 2008).

Roles, Relationships, and Responsibilities – Post-transfer:

The Authority is now solely responsible for maintaining the 14 lock and dam structures on the Kentucky River for recreational boating and water supply. It is charged with developing comprehensive plans for the management of the Kentucky River Basin, including long-range water supply, drought response and ground water protection plans. It is to adopt regulations to improve and coordinate water resource activities within the basin among state agencies. It is also charged to develop recreational areas within the basin.

The Authority is supported by water-user fees collected from facilities which withdraw water from the basin. Exemptions are given to facilities using water for agricultural purposes. These fees are then passed on to the citizens and companies in the basin who purchase water.

Historical, Cultural, Environmental, and Other Operational Constraints:

All issues regarding historical and cultural constraints were addressed before the deeds were transferred. The most significant historic issues were the proper and adequate documentation of all structures before the repairs and, in some cases, removal of, the many historic structures at the Locks and Dams. This is not anticipated to be a significant issue for Willamette Falls Locks. At the present time, no historic buildings are proposed for removal at Willamette Falls.

The removal of lead contaminated soil around the structures was significant, and required years of negotiation and work. In some locations the soil was removed and replaced at Corps expense. In other sites, the soil was left in place but restrictions prohibit residential use of the buildings. In the final deed the State accepts the property "as is" and will exercise no additional claims upon the United States for asbestos, lead based paint, or other conditions. However, a CERCLA covenant states that any hazardous substances covered by CERCLA will remain the responsibility of the United States and the Corps retains the right of access to accomplish such work if it becomes necessary.

Liability Arrangements and Issues:

With the recording of the quitclaim deeds the Kentucky River Authority assumes all liability and responsibility (aside from CERCLA claims) for the operations, restoration, and maintenance of the system. The liability was shared from 1990 -2006 when the Commonwealth operated the locks under a lease arrangement. Copies of those leases were not provided during the preparation of this report.

A key provision in the deed, that is now a requirement for all federal agencies, is a clause on the Anti-Deficiency Act. "The GRANTOR's obligation to pay or reimburse any money under this deed is subject to the availability of funds appropriated for this purpose to the Department of Army, and nothing in this deed shall be interpreted to require obligations or payments by the GRANTOR in violation of the Anti-Deficiency Act, 31 U.S.C. 1341."

Required Real Estate Actions and Issues:

The responsibility for transfer costs and actions, such as title searches and surveys was borne by the Corps of Engineers as directed by the authorizing language.

Jurisdictional Authorities and Permitting:

The direct transfer of Kentucky River Locks and Dams 5-14 to the Commonwealth of Kentucky was authorized by language in Public Law 84-996, as amended by Public Law 99-662, dated 17 November 1986; Public Law 102-377, dated 1 October 1992, and Public Law 103-126, dated 28 October 1993.

Funding Arrangements and Responsibilities:

The Kentucky River Authority and the Kentucky Congressional delegation required all major capital repairs that impacted the water supply system to be completed and paid for by the Corps as a term of transfer. This did not necessarily include all repairs needed to have a fully functional navigation system. The Authority is funded through dedicated funds provided by a surcharge on water supply fees charged to local communities and through state appropriations. In recent years, KRA has received only a portion of the funds requested from the Commonwealth's Assembly, as depicted in Table 4-1.

Closure and Abandonment Provisions:

No specific provisions were included in the deed for liability if the project is ultimately abandoned.

Table 4-1.

State Appropriations for Kentucky River Locks

General Government

Kentucky River Authority

	Revised FY 2006	Requested FY 2007	Requested FY 2008	Recommended FY 2007	Recommended FY 2008
Total	**1,735,200**	**7,335,100**	**3,254,500**	**5,804,800**	**1,671,600**

Note: these figures include all water system costs as well as navigation.

Restricted funds in the amount of $4,620,000 in FY 2007 and $500,000 in FY 2008 were transferred to capital projects.

Relationship of the Transferred Property to the Larger Navigation System:

The federal navigation channel from Lock and Dam 5 through Lock and Dam 14 has been relinquished to the Kentucky River Authority.

FINDINGS AND CONCLUSIONS:

- Early, frequent and clear communication with the Corps is essential. Focus on the common goal of providing continued operation of a historic facility with the eventual elimination of federal funding for O&M. The Kentucky Locks transfer became a struggle because many of the side issues derailed the ultimate goal.
- It is important to have strong, consistent leadership throughout the lengthy process. The leaders must be able to develop political support both in the state and at the national level. The entire transfer for the Kentucky Locks took over fifty years from the first consideration of lock closure in 1951. The creation of the Kentucky River Authority in 1986 was the culmination of three decades of work. The Authority was given broad powers and authorities to achieve its missions.
- The Kentucky Congressional delegation was consistent in its support of a functioning Kentucky Locks and Dams system. They were also well-placed on critical subcommittees and enjoyed high levels seniority. Oregon does not currently have similar levels of

seniority on Appropriations Committees in Congress, which may affect the ability to secure funding for a favorable transfer. The current national budget picture is also more restricted when compared to the 1980's and 1990's.

- The Governor and state government provided very strong support throughout the long process and identified a state agency to manage the locks. The state legislature was willing to provide the Kentucky River Authority with broad powers and authorities to accomplish its missions. It was helpful, of course, that the Kentucky River flows through the capitol city and is a major source of water for Frankfort.
- Capital costs are always higher than expected. Over the time of the lease, a total of $14 million was spent on repairs to the ten locks. These repairs were only for the structures that impacted water supply.
- Internal coordination is critical. The Corps district and division offices were eventually superseded by the Assistant Secretary of the Army's office as the negotiations neared completion. Within the Commonwealth of Kentucky, separate state agencies in the environmental and cultural areas slowed the process considerably by insisting on very strict and rigid interpretation of state regulations.
- The exact wording of the Congressional authorizing language can significantly expedite the process and bring clarity to who pays the administrative costs. The Water Resources Act of 1986 and the Energy and Water Development Appropriations Acts of 1993, 1994, and 1996 provided authority and funding for the Corps to pay administrative and repair costs prior to the transfer. The language allowed direct transfer, which avoided using GSA as a middleman, and significantly reduced the complexity of the transfer.
- Lock fees will not cover O&M costs. The Kentucky River Authority has a fee schedule for the locks but only recovers a small portion of the operational expenses. Even with significant authority to charge communities for water withdrawals, the Authority still has to go to the legislature for additional funding for operations and capital repairs.

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CHAPTER 5

CASE STUDY #3

THE LOWER FOX RIVER LOCKS, WISCONSIN

INTRODUCTION:

Historic Overview:

Plans for development of a water route across Wisconsin between Lake Michigan and the Mississippi River were first proposed in 1829. The intent was to dig a canal near what is now Portage that would join the headwaters of the Fox River, which flows into Lake Michigan at Green Bay, and the Wisconsin River, which joins the Mississippi at Prairie du Chien. Although started in 1840, construction of what came to be known as the Fox-Wisconsin Waterway was delayed due to lack of funding until 1853 when the state of Wisconsin incorporated the Fox and Wisconsin Improvement Company to undertake the project as a private enterprise. The project was sufficiently complete for a steamship to make the journey from Prairie du Chien to Green Bay in 1856. (Cornerstone Preservation, LLC, 2007).

Substantial work remained, however, especially in overcoming the challenge of maintaining a consistent channel depth in the Wisconsin River due to constantly shifting sands and erratic flow. Continuous cost overruns forced the Fox and Wisconsin Improvement Company into bankruptcy in 1866. Its successor, the Green Bay and Mississippi Canal Company, was more interested in developing the river's hydropower potential than in operating the system's navigation features. Consequently, in 1870 Congress authorized that the navigational features be transferred to the U.S. Army Corps of Engineers. The transfer to the Corps was completed on October 28, 1872. (Cornerstone Preservation, LLC, 2007).

The Corps made systematic repairs and rebuilt most of the locks on the Lower Fox River at the turn of century, facilitating industrial development in the communities along the river. The Fox River system played a major role in regional transportation and commerce, while the river's hydroelectric dams powered the growth of logging, manufacturing, and paper. But the growth of

the railroad and highway system gradually displaced water-borne transport. Commercial navigation use of the Fox-Wisconsin Waterway largely ceased by the early 1950s and ended completely in 1959. The decrease in commercial traffic was partially offset by an increase in use by recreational vessels. But recreational use was not sufficient to justify maintaining the entire system. Consequently, the Upper Fox River locks between Portage and Lake Winnebago were closed by the Corps in 1962.[33] In the late 1970s, the Corps publicly announced a desire to relinquish responsibility for the navigational aspect of the waterway altogether.[34] (Cornerstone Preservation, LLC, 2007; Legislative Reference Bureau, 2001). The Corps intended to cease federal support for commercial navigation[35] by 1983 and place the Lower Fox facilities in caretaker status (Legislative Reference Bureau, 2001).

In response to the Corps' desire to close or transfer the facilities, a local group of concerned citizens organized themselves as a nonprofit advocacy group called the *Friends of the Fox* in 1982 to protest the system's closure and promote its preservation. *Friends of the Fox* became involved in a grassroots effort that helped convince members of Wisconsin's Congressional delegation, members of the state legislature, and the governor to prevent the system from being shut down and, ultimately, for the state to take over its operation. (Friends of the Fox, 2008a).[36,37]

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[33] The FRSNA Executive Director stated that the upper Fox River locks were filled in and the property transferred to the state. Boat lifts were installed to move recreation craft around the closed locks, but the system fell into disrepair during the 1960s. (Interview, 2008).

[34] According to the Corps Chicago District's 1977 Final Environmental Statement, the "proposed Federal action" was to continue operation and maintenance of the Fox River facilities. The announcement seeking to transfer ownership must have occurred after this document was published.

[35] The phrasing "intended to cease federal support for commercial navigation" is as used in the Legislative Reference Bureau's report. It may be incorrect; note that the Corps doesn't do commercial navigation. More likely the channel was deauthorized in response to the lack of commercial navigation traffic.

[36] Several sources note a "grassroots effort" undertaken by state and local authorities and "various private entities" in response to the Corps' announcement. See Legislative Reference Bureau, 2001; Collar, 2007; Ellsworth, 2007; and Friends of the Fox, 2008a. Who exactly these other "various private entities" were is not specified in the material reviewed for this report. *Friends of the Fox* was (per their web site and per a discussion with their former president) among the first of these groups.

[37] It should be noted that other accounts do not mention the grassroots, non-government groups at all when discussing the origin of the state's interest in acquiring the locks. Rather, they imply that the local congressional

The state Congressional delegation succeeded in obtaining funds to keep the system open in 1983 and 1984 (Preservation Cornerstone, LLC, 2007; Ellsworth, 2007). The state took over operation of the locks through a lease arrangement with the Corps in 1984 (Legislative Reference Bureau, 2001; Cornerstone Preservation, LLC, 2007).

The Corps' announcement of its intent to close the locks began two decades of negotiations which eventually led to the state's acquisition of the navigation features on the lower Fox River and all of the responsibilities that came with ownership. During this period, a number of state and federal actions took place to establish an appropriate management structure and secure the necessary jurisdictional authorities to secure a transfer of ownership; these actions are discussed in detail below. The transfer of ownership was completed on September 17, 2004. (Cornerstone Preservation, LLC, 2007; Ellsworth, 2007).

Description of Facilities Transferred:

The facilities transferred from the Corps to the state of Wisconsin included seventeen locks, 94 acres of land, three harbors, and an assortment of related buildings located along 39 miles of the Lower Fox River between Green Bay and Menasha (on Lake Winnebago), Wisconsin. The Corps retained ownership and operation of nine federal dams on the Lower Fox and control over four privately owned dams for purposes of flood control and water supply. (Cornerstone Preservation, 2007; Ellsworth, 2007). At the time of transfer, only three of the locks were operational. Figure 5-1 diagrams the Lower Fox River system and its locks.

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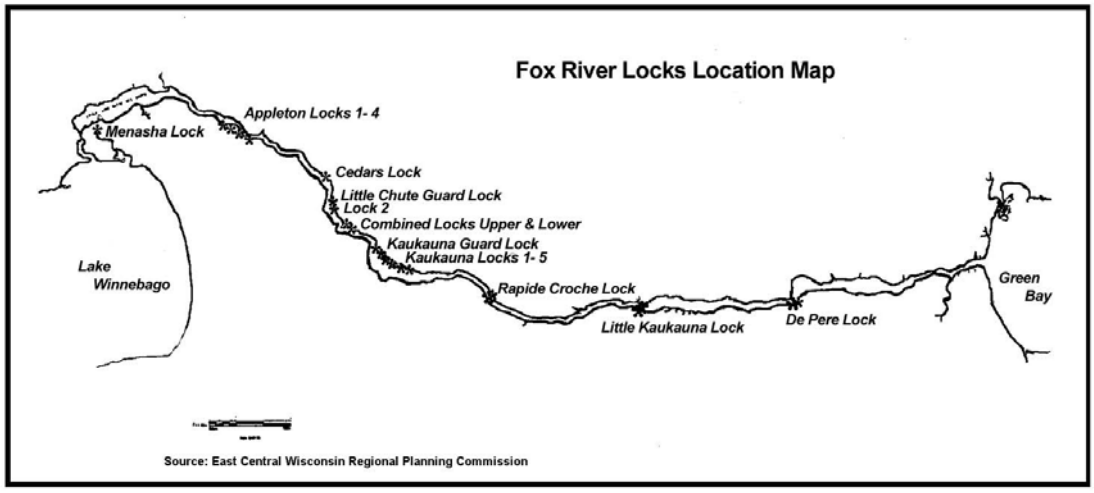
delegation originated the transfer effort. See Petri Press Release, 2004; Kohl Press Release, 2003; and Cornerstone Preservation, 2007.

Figure 5-1.

Lower Fox River, Wisconsin[38]



Assessment of Transfer Success:

There seems to be little doubt of the importance of the Lower Fox River system to the regional economy in the minds of state and local leaders. For example, state representative Steve Kagan organized a tour of the Lower Fox system for Wisconsin delegation members in August 2007 in order to show members of Congress the importance of the river to northeast Wisconsin. Kagan characterized the restoration of the locks by stating "this is part of our infrastructure, this is part of our economic development. This river is the very heart of our economy." Money directed toward Fox River improvements constituted an investment toward the region's vitality. Kagan further stated that Lower Fox River improvements are starting to spur business as "the river makes its transition from industrial to recreational use." (Collar, 2007).

Two individuals[39] with close ties to the entire transfer process were interviewed for this report, and their responses indicate high satisfaction with the transfer to date. They described the transfer as a "win-win-win" for locals, the state, and the federal government. They made

[38] Diagram obtained from The Wisconsin Legislative Bureau budget brief #01-6, Fox River Navigational System Authority, dated October 2001, page 2.

[39] The first individual was the current Chair of the Fox River System Navigational Authority and former president of *Friends of the Fox*. The second is FRSNA's executive director and former director of the Eastern Wisconsin Regional Planning Commission. Both have been involved with the process and the system since the early 1980s.

particular note of the benefits to the local economy and the protection offered to the environment through steps taken to prevent invasive species from working their way further up the Fox River.

The Fox River System Navigational Authority (FRSNA) has a 30-year management plan that calls for, among other goals, the completion of restoration work by 2009 and reopening the entire Lower Fox system by 2010. FRSNA has been very successful in executing its plan, meeting its timelines and bringing in some projects on time and on or under budget. (Friends of the Fox, 2007). Five locks have been restored and opened since the transfer took place, making a total of eight locks available for the 2008 boating season (Friends of the Fox, 2008c).

TRANSFER ISSUES:

Roles, Relationships, and Responsibilities - Pre-transfer:

The Transfer of the Lower Fox River locks from the Corps of Engineers to the State of Wisconsin occurred over a twenty-year period. Parties involved in pre-transfer events include both government and non-governmental entities. Ellsworth (2007) states that "various private entities" undertook to assume ownership of the seventeen locks and land in the 1980s. Among them was the group *Friends of the Fox* whose web site serves as a source of much of the information presented in this report. Participating state entities include the Office of the Governor; the state legislature; the state Departments of Natural Resources and Administration; and the Fox River Management Commission, a governor-appointed entity created expressly to assume responsibility for the operation of the Lower Fox River locks, on lease from the Corps, beginning in 1984. Several consultants were hired by the state during the negotiation period to assist with technical questions, the most prominent being the engineering firm Mead and Hunt. Federal participants included the Detroit and Chicago Districts of the Corps of Engineers; the Office of the Assistant Secretary of the Army (ASA) for Civil Works; the ASA for Installations and Housing; and Congress. The history of the transfer and the role played by each is as follows:

The Corps initially announced its intent to suspend all operations in 1982 and sought to either transfer the facilities to a non-federal entity or place the locks in caretaker status. *Friends*

of the Fox[40] formed in response to this announcement. *Friends of the Fox* is a 501(c) (3) non-profit advocacy group established "to preserve and develop the environmental, cultural, historical, economic and quality-of-life assets offered by the Fox River." According to their web site and the recollection of their former president, *Friends of the Fox* played a central role in preventing closure of the Lower Fox system and in successfully advocating for eventual state control. The grassroots efforts by citizens and organized groups such as *Friends of the Fox* collectively advocated for action by the state and its congressional delegation. With this support, the delegation was successful in securing funding for the Corps to continue operation of the locks through the 1983 and 1984 seasons, two years beyond what it initially planned. Non-profit groups were also instrumental in initiating studies and convincing the governor to assume an active role for the state (Preservation Cornerstone, 2007; Ellsworth, 2007). *Friends of the Fox* are active in raising funds to support the private funding requirement of the transfer agreement (Friends of the Fox, 2007). The lesson for the Willamette Falls Locks is the power of an organized, advocacy-oriented non-profit presence to develop a compelling vision, guide and educate the political process, solicit private donations, and help facilitate state and federal agency action.

While the delegation delayed the Corps' closure of the locks, the state was preparing to at least partially take over the locks' operation. On May 11, 1984, the state[41] created the Fox River Management Commission and placed it under the state's Department of Natural Resources (DNR). Consisting of seven board members, the Commission's mission was to assume responsibility for the locks' operation under a leasing arrangement with the Corps. The Commission did not have authority or funding for maintenance (which remained a Corps function) or restoration. (Legislative Reference Bureau, 2001; Cornerstone Preservation, 2007; Interview, FRSNA Executive Director, 2008).

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[40] The organization's membership is not shown on its website, but pictures indicate that businesses along the river, such as marinas, are members. (Friends of the Fox, 2008b).

[41] According to the Cornerstone Preservation report (2007), the Commission was created by the governor. However, Legislative Reference Bureau Budget Brief 01-6 (2001) states that the Commission was created by "the state" and Legislative Fiscal Bureau Paper #345 indicates it was created by statute. The authors of this report found no statutory citation for the Commission in the material reviewed for this study. Consequently, it is not clear if the Commission was created by executive or legislative action. Commission funding, however, was supported by state appropriations up until the time the Commission was formally terminated.

The Commission was funded from two sources. Its main source of funds came from a biennial appropriation to the state's Water Resources Account, managed by the DNR. This account was created in 1987 and resourced from state motorboat fuel taxes. (Legislative Fiscal Bureau, 1999). From this account, the Commission expended $77,300 in FY 1997-1998; $98,000 in FY 1999-2000; and $114,000 in FY 2000-2001. It was expected to spend $110,000 in FY 2001-2002, and budgeted for $111,000 in FY 2002-2003. Its second source of funds was a continuing resolution that authorized the Commission to collect usage fees and use them for operations, maintenance[42] and Commission expenses, an amount estimated to be $19,000 for FY 2002-2003. (Legislative Fiscal Bureau, 2003).

During the mid 1980s, the Corps only provided "minimum maintenance" for the locks (Kohl press release, 2003). The Commission operated all 17 locks from 1985 – 1987. Apparently, the lack of sufficient maintenance funding resulted in the closure of 14 locks in the summer of 1987, leaving only three operational. These were the upper most lock at Menasha near Lake Winnebago and the two lowest locks, Little Kaukauna and De Pere. (Cornerstone Preservation, 2007).

In 1988, the Corps extended a formal offer to transfer the Lower Fox locks to the state. The state, however, was reluctant to assume full responsibility for the expense of care and maintenance, preferring this to remain a Corps obligation. Discussions occurred through the summer of 1989. The Corps position was that, if some non-federal entity did not take full ownership, the locks would be permanently closed. The opportunity for breakthrough came when the Corps offered to provide the money that would otherwise be spent in closing the locks to the receiving party to offset the cost of repair and rehabilitation. The state expressed interest, but disputes over the estimated cost of repairs and abandonment delayed agreement. (Cornerstone Preservation, 2007). Additionally, there was still no source for state cost share funds. Local communities refused to support a transfer with local jurisdiction tax revenues. Ultimately, an acceptable solution was offered and advocated by *Friends of the Fox,* who lobbied

[42] Legislative Reference Bureau Budget Brief 01-06 (October, 2001) indicates that the Commission was not authorized to fund locks maintenance. Presumably, the maintenance mentioned in the Legislative Fiscal Bureau's paper #345 refers to maintenance of Commission facilities, though this is not clear.

for a mix of state tax funds and locally raised private party donations to meet the state's cost share. (Interview, FRSNA Executive Director, 2008).

Throughout the 1990s, the Corps continued to propose closing the locks if a new owner could not be found. Their preferred option was to fill the chambers with earth and dispose of the property. Local groups began urging the state take over the properties for development as a recreational and historic corridor. (Legislative Reference Bureau, 2001). Meanwhile, the Wisconsin congressional delegation led initiatives to obtain greater federal funding and sought support for including the system as part of a National Heritage Corridor.[43] (Cornerstone Preservation, 20007). Language was included in Section 332 of the Water Resources Development Act (WRDA) of 1992 authorizing the Secretary of the Army to transfer the "locks and appurtenant features" to the State of Wisconsin, subject to the execution of an agreement between the state and federal governments. Concurrently, the Fox-Wisconsin waterway was named as one of four tourism pilot projects in Wisconsin by the National Trust for Historic Preservation. Apparently in support of this effort, and optimistic that these developments would assist in finding a new owner, the Corps nominated the locks for inclusion in the National Register of Historic Places.[44,45]

The delegation was only partially successful in their quest for continued federal funding of the system. Section 103 of the Energy and Water Development Appropriations Act of 1993 directed the Corps to maintain the navigation portion of the Fox River System in caretaker status, thus – for the time being – forestalling the system's full closure. But this Act also required the

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[43] The idea of a National Heritage Corridor emerged as a way to raise funds from federal sources. Initially inspired by the Lower Fox River effort, the Corridor failed to generate the desired federal grants. As of this writing, proponents are pursuing registration through the National Park Service. (Interview, FRSNA Chair, 2008).

[44] The NRHP nomination is contradictory in that the Corps' preferred alternative to transferring ownership was to fill the locks and thus bury any historical value they may have had.

[45] At some point, the efforts to preserve the Lower Fox River were integrated into a broader state project, the Wisconsin Heritage State Parkway. The Parkway project calls for developing the old Fox-Wisconsin Waterway between Prairie du Chien and Green Bay as a linked system of historical sites, parks, and other public-use places in addition to restoration of the Lower Fox system. (Unlock the Fox, 2006). It is not clear if the effort to restore the Lower Fox inspired this broader effort or vice versa.

Assistant Secretary of the Army for Civil Works (ASA (CW)) to "take over negotiations with the State of Wisconsin for the orderly *transfer of ownership and operation of the Fox River Lock System to a non-federal entity*" (emphasis added), thus clearly rejecting the state's preference that ownership responsibilities remain with the federal government.

However, in 1997 the Corps reported that negotiations with the state had again stalled over the issue of financial compensation and recommended that the locks be closed and filled (Cornerstone Preservation, 2007). A key issue was the Corps' estimate of $2.8 million for closure of the locks, a figure the state believed to be too low. Additionally, friction and misunderstandings arose between the state and Corps, due to a lack of familiarity with the others' procedures and processes. (Interview, FRSNA Executive Director, 2008).

In response, the state reinitiated negotiations in 1998 (Interview, FRSNA Executive Director, 2008). The Secretary of DNR personally led the state negotiation contingent. He and the ASA (CW) established the Fox Locks Work Group with the goal of working through a settlement acceptable to both parties. In September 2001 this group concluded its work with a memorandum of agreement (MOA), signed by the Wisconsin Governor, the Secretary of DNR, and ASA (CW). The MOA detailed the monetary agreement and other provisions for the transfer. It called for a $10 million (up from the original $2.8 million estimate) lump-sum payment from the federal government to the state for rehabilitation and restoration of the locks. It also called for an additional amount of up to $5.5 million[46] to be matched dollar for dollar by state and local funds. (Cornerstone Preservation, 2007; Friends of the Fox, 2007; Legislative Fiscal Bureau, 2003). The $5.5 million was estimated as the federal recreation benefit attributable to the locks (Interview, FRSNA Executive Director, 2008). It was envisioned that the transfer would occur shortly after the MOA's signing, perhaps as soon as the following month (Legislative Fiscal Bureau, 2003).

[46] This amount is reported in various sources as either $5.5 million or $5.6 million. Pending the receipt of a copy of the MOA, it is unclear which is correct. The $5.5 million figure is used throughout this report in the interest of consistency.

In anticipation of the transfer agreement, the Wisconsin State Legislature created the Fox River Navigational System Authority under 2001 Wisconsin Act 16, the biennial state budget act, which was signed by the governor on August 30, 2001. FRSNA was to replace the Fox River Management Commission upon transfer of the Lower Fox facilities, but with a much broader array of responsibilities. In addition to operations, FRSNA would assume control of system rehabilitation, repair, and replacement of the transferred facilities as well as routine maintenance. (Legislative Fiscal Bureau, 2003; Friends of the Fox, 2007).

As described in the bill which became Act 16[47], FRSNA was to be managed by a nine-member board appointed by the governor and confirmed by the state senate. Three members were to be the heads (or their designated representatives) of the state departments of Natural Resources and Transportation, and the State Historical Society. The other six were to be appointed for staggered three year terms from the three counties along the Lower Fox. Two would be appointed from each county, and were required to be residents of the county from which appointed. FRSNA was authorized to set its own budget and to hire an executive director and staff. Although FRSNA would not assume any operational role until the date of transfer, Act 16 allowed the board to be established and an executive director to be hired immediately. (Legislative Fiscal Bureau, 2003). A chair was to be selected from among the board members, and five members would represent a quorum for the purposes of conducting board business (Legislative Fiscal Bureau, 2001). By establishing FRSNA early, the state created the organizational infrastructure to manage the transition from the joint Commission-Corps operating agreement to full state ownership and operation.

But even with the signed transfer agreement and Wisconsin's readiness to accept ownership, the Wisconsin delegation was unable to secure the full $10 million lump-sum federal appropriation for two more years. Half was appropriated in 2002, the balance in 2003[48]. An

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[47] The language regarding FRSNA in 2001 Wisconsin Act 16 is scattered throughout various sections of the almost 800 page statute. Information provided here is from a synopsis written by Wisconsin's Legislative Reference and Legislative Fiscal bureaus.

[48] The 2003 appropriations also included $150,000 for the Corps to conduct a feasibility study for elimination of PCBs from the Lower Fox (Kohl Press Release, 2003). See "environmental constraints" below. This study was independent of the locks transfer.

additional $1.8 million, apparently provided from the Corps Operations and Maintenance account, was added to cover inflation incurred over the two year delay. (Petri Press Release, 2004). Thus, assuming the state would be able to raise their full cost-share, the total amount expected to ultimately be available to fund the transfer, rehabilitation, operations, and maintenance was approximately $23 million (the $11.8 million lump sum from the Corps; $5.5 million in state and local cost-share funds; and up to $5.5 million in matching federal funds).

The formal transfer signing and ceremony occurred on September 17, 2004. (Wideman, 2004; Petri Press Release, 2004).

Roles, Relationships, and Responsibilities – Post-transfer:

The transfer ended federal authority and responsibility for operations of the Lower Fox navigation system, although the Corps retained ownership and operation of the dams and regulatory authority over water and flood control. From here on out, the full responsibility for the navigational system rested with the state.

The Fox River Management Commission ceased operations in 2003 in anticipation of the transfer (Legislative Fiscal Bureau, 2003) and was formally terminated through section 15.345(5) of 2005 Wisconsin Act 1-491.

Funding for the state's $5.5 million cost share was split between state tax revenues and private donations. DNR was required to set aside $400,000 annually for seven years ($2.8 million total) from the Water Resources Account, the same source that funded the Fox River Management Commission. This amount was to be released in amounts to match the annual amounts raised by nonprofit corporations. In order to receive the state funds, FRSNA was required to contract with one or more locally based non-profit organizations to provide marketing and fund-raising services and raise the other half of the needed cost share. (Legislative Fiscal Bureau, 2001).

Wisconsin Act 16 established the relationship of FRSNA with other state agencies and detailed its oversight. It is not a state agency, has no bonding authority, and is not subject to

state rule-making statutes. It must, however, comply with the state's open records and open meeting laws, and must retain a record of its proceedings. Act 16 also requires a management plan be submitted to DOA that addressed anticipated costs and funding for the rehabilitation, repair, replacement, operation, and maintenance of the system. Additionally, FRSNA is required to describe how it would manage available funds to ensure sufficient resources would be available to abandon the system if operation proved no longer feasible (see "abandonment" below). FRSNA was also authorized to contract with third parties for design and construction of the system's facilities. (Legislative Fiscal Bureau, 2001; Legislative Reference Bureau, 2001). FRSNA submitted its plan as required, envisioning that lock restoration would be completed by 2009 and the lock system fully operational by 2010. As of 2007, this plan was on schedule and within budget. (Friends of the Fox, 2007).

Historical, Cultural, Environmental, and Other Operational Constraints:

Historical Constraint: The seventeen locks were listed in the National Register of Historic Places (NRHP) in 1992. As listed properties, and under the terms of Section 106 of the National Historic Preservation Act, modifications undertaken with the expenditure of federal funds are subject to review by the office of the State Historical Preservation Officer (SHPO) and require consultation with appropriate state and local officials. FRNSA was committed to maintaining the historical integrity of the locks during their rehabilitation, and contracted with a consultant, Cornerstone Preservation, LLC, to review historic documentation to ensure a sound preservation treatment approach to restoration work. (Cornerstone Preservation, LLC, 2007). The Willamette Falls Locks are also registered in NRHP, and any restoration conducted with federal funds would therefore be subject to the same restrictions.

Cultural Constraints: None discussed or implied in the information reviewed.

Environmental Constraint – Invasive Species: As part of the transfer agreement, one of the locks, Rapid Croche (located at Wrightstown), was to remain permanently filled and sealed as a barrier to prevent sea lamprey and other invasive species from migrating from Lake Michigan upriver to Lake Winnebago (Ellsworth, 2007). A boat lift and transfer station will

move and clean boats overland around this lock in order to prevent the spread of invasive species (Moy, 2008).

Environmental Constraint – PCB Contamination: Starting in 1954, multiple paper companies and associated waste treatment facilities released polychlorinated biphenyls (PCBs) into the Lower Fox River. These releases were byproducts of a process that made carbonless copy paper. PCB releases increased through the 1960s, peaked in 1969, and began dropping sharply in 1971. An estimated 39,400 to 47,300 kg of PCBs remain in river bed sediment throughout the Lower Fox River, with concentrations increasing as one moves downriver from Neenah (on Lake Winnebago and upriver of the paper company facilities) to Green Bay. (Status Consulting, Inc., 2000). There is no indication in any of the documents and websites reviewed for this study that any of the facilities transferred from the Corps to the state of Wisconsin are or have been sources of PCB contamination, a point confirmed by the FRSNA Executive Director (Interview, 2008). However, the Quitclaim Deed that officially transferred ownership of the Lower Fox facilities made the conveyance subject to Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provisions and other environmental restrictions. (Ellsworth, 2007). The exact terms of that restriction may require further review.

Environmental Constraint – Lead Paint Contamination: The Quitclaim Deed also served notice of the presence of lead based paint in the transferred facilities. The state of Wisconsin assumed the cost to conform to Army abatement requirements as identified in the Residential Lead-Based Paint Hazard Reduction Act of 1992. (Ellsworth, 2007). The nature of those costs may require further review.

For the most part, the Corps addressed lead contamination – mostly soil contamination from paint-scraping of the exterior walls - in the buildings prior to transfer. There was an exception on one building that was transferred to the state with the understanding that the Corps would continue to seek funding to complete the soil cleanup. Those funds have not been forthcoming and, in hindsight and in the opinion of the FRSNA Executive Director, it may have been faster and cheaper if the state had assumed responsibility for the cleanup of that one

facility. However, this one exception notwithstanding, there were no contamination issues that materially affected the transfer. (Interview, FRSNA Executive Director, 2008).

Operational Constraint – Flood Control: It was understood in the transfer negotiations that the Corps would continue to operate the Fox River dams as part of its flood control responsibilities (Ellsworth, 2007; Legislative Reference Bureau, 2001). What is not clear in the documents reviewed is the relationship between the Corps' ongoing flood control mission and the operation of the navigation facilities. The nature of this relationship warrants further review.

Liability Arrangements and Issues:

The Fox River System Navigational Authority is fully responsible for the operations, restoration, and maintenance of the system, and is liable for those functions. The Corps retains liability for the operation of the dams and its regulatory decisions over the head locks and levee system. (Interview, FRSNA Executive Director, 2008).

Required Real Estate Actions and Issues:

Federal Real Estate Actions. On 3 September 2004, the Deputy Assistant Secretary of the Army for Installations and Housing[49] signed the Quitclaim Deed officially transferring all rights, title and interest and $11,831,000 (to provide funding for repairs that might be necessary) to the State of Wisconsin. The Quitclaim Deed included the following easements:

- Pedestrian
- Water gauge
- Water regulation feature (land retained by the Government)[50]
- Channel improvement (the Government retained the right to protect the integrity of the Federal water regulation features as authorized by Congress)
- Vehicle (the federal government retained rights on many parcels and tracts for vehicular access)

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[49] The name of this office was subsequently changed to the Assistant Secretary of the Army for Installations and Environment (ASA-I&E).

[50] Presumably the "water regulation feature" refers to an element of the facilities related to flood control, a mission retained by the Corps.

The conveyance was also subject to:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Other environmental restrictions
- Notice of presence of lead based paint (the State of Wisconsin assumed the cost to conform to Army abatement requirements under Title X of the Housing and Community Development Act of 1992, 42 U.S.C. 485, et. Seq. and 15 U.S.C. 2681, et. seq. (Residential Lead-Based Paint Hazard Reduction Act of 1992)
- Condition of Property
- Historic considerations (The Fox River property is listed in the National register of Historic Places as the "Water Resources of the Lower Fox River, 1850-1941")

Included in the Quitclaim package was a "Determination of Excess" also signed by the Deputy Assistant Secretary of the Army (Installations and Housing) that stated in part, "I have determined that the described property is not required for Department of Army needs and the discharge of its responsibilities, and is excess to the Army." (Ellsworth, 2007).

State Real Estate Actions: Wisconsin Act 16 authorized the state's Department of Administration (DOA) to formally take possession of the property and "own" it in the name of the state. Act 16 also authorized the Secretary of DOA to determine the amount of rental payments. (Legislative Fiscal Bureau, 2001). FRSNA entered into a rental arrangement with DOA at the time of the transfer, leasing the facilities for $1 per year for thirty years (though 2034). (Wideman, 2004; Interview, FSRNA Executive Director, 2008).

Their were two real estate issues that, if properly addressed in advance, would have smoothed the transfer proceedings. The first issue was land ownership. "Cloudy deeds" did not clearly delineate who owned what property at the time of transfer. The process would have benefited from conducting surveys and resolving land ownership issues before the transfer was completed. The second issue involved approximately 75 easements and out-grants that were in place when the facilities were under Corps ownership and were simply "dropped" at the time of transfer. This created problems for those who came to depend on those easements. Conducting

a clear inventory of all easements in place, and developing a plan for them prior to the transfer would have prevented later conflicts. (Interview, FRSNA Executive Director, 2008).

Jurisdictional Authorities and Permitting:

Federal: The transfer required congressional authority and appropriations. Transfer authority was granted through Section 34 of the Water Resources Development Act of 1992. Appropriations to fund the transfer were provided through the Energy and Water Development Appropriations Acts of 1992 and 1993. The authority to provide additional funds was provided through Section 341 of the Water Resources Development Act of 2000. $11,831,000 was provided in the Energy and Water Development Appropriations Act of 2004. The Corps retained jurisdiction over flood control operations. Presumably, it also retained regulatory permitting over new work under Section 404 of the Clean Water Act.[51]

State: Wisconsin Act 16 created the Fox River System Navigational Authority to assume full responsibility for the rehabilitation, operation, and maintenance of the system. Act 16 also exempted any activity or project involving the navigational system, including abandonment, from permit or approval requirements otherwise required under Wisconsin navigation and water resources statutes and regulations.[52] (Legislative Fiscal Bureau, 2001).

Funding Arrangements and Responsibilities:

Financial Planning: The state's East Central Regional Planning Commission prepared a fifty-year rehabilitation and maintenance funding schedule. Assuming the funds would generate a 9% investment return, and setting aside the funds needed to cover potential abandonment (see "Closure and Abandonment Provisions" below), they estimated that the $21 million provided by the transfer[53] would cover the first thirty years. They noted that this plan would not reserve

[51] There was no reference found for any waiver of Section 404 requirements under the transfer.

[52] DNR voiced objections to the exemptions for dredging permits and lack of environmental oversight. (Legislative Fiscal Bureau, 2001). It is not clear how these concerns were resolved.

[53] The $21 million was based on the original Corps contribution of $10 million. As previously noted, this was increased to $11.8 million to cover the cost of inflation. The other $11 million was comprised of the up-to $5.5

sufficient funds for abandonment after the fourth year so, if abandonment were to occur after that time, additional state funds would be needed. They estimated that the majority of rehabilitation and restoration work could be accomplished in the first seven to ten years of the project. Annual costs for rehabilitation and restoration and routine maintenance and repair were estimated at $718,000 for the first ten years of the project. (Legislative Reference Bureau, 2001). FRSNA has actually exceeded the original expectations, and estimates that the system is on track to open by 2010, about six years after the transfer. (Friends of the Fox, 2007). In other words, the system will require additional external funding if it is not self-sustaining within thirty years (Interview, FRSNA Executive Director, 2008).

Financial Management: State law authorized funds to be raised and held by FRSNA for the purposes of the project. All funds collected from the federal government, state appropriations, and private donations were invested in long term bonds and equities with Marshall and Ilsley (M & I) Bank of Wisconsin. Interest accrued is used to help pay system expenses. (Interview, FRSNA Executive Director, 2008). [54]

Federal Funds: The Corps provided $11.8 million at the time of the transfer. The agreement promised an additional $5.5 million (1) provided it is matched with a dollar for dollar cost share and (2) subject to congressional appropriation. Assuming the non-federal cost share funds materialized, the Corps' plan was to request $800,000 per year over seven years. However, this request has not been supported in Congress until just recently. FRSNA anticipates receiving $2.1 million in October 2008. (Interview, FRSNA Executive Director, 2008).

State Funds: The $2.8 million of the state government's cost share is provided through annual appropriations of $400,000 per year over seven years. Additional funds for routine

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million amount for the federal cost share plus $2.8 million from state appropriations for the state cost share, and $2.7 million from local contributions

[54] The authors assumed this authority came from Wisconsin Act 16. However, the FRSNA Chair noted that the authority was in Wisconsin Act 237. The authors were unable to obtain an "Act 237" that addressed Fox River issues. This discrepancy is not resolved as of this writing.

operations are appropriated separately (see Operational Funds, below). (Legislative Fiscal Bureau, 2001; Interview, FRSNA Chair, 2008).

Private Fund Raising. In order to receive state appropriations, FRSNA is required to contract with one or more local non-profit organizations to raise private donations. (Legislative Financial Bureau, 2001). *Friends of the Fox* assists with advocating for and collecting donations through their web site. However, most were raised through community foundations such as the Fox Valley Community Foundation, the Green Bay Community Foundation, and the Osh Kosh Community Foundation. After a strong start, private donations have since slowed. As of this writing, private donations are $300,000 short of the $2.8 million needed. (Interview, FRSNA Chair, 2008).

Operational Funds: The federal, state, and private cost share contributions were not intended to cover operational costs. FRSNA's administrative expenses (board travel expenses, director's salary, and supplies) are provided from the water resources account previously used to fund the Fox River Management Commission. For 2007, $126,700 was appropriated for these purposes. (Legislative Fiscal Bureau, 2007). The day-to-day operating expenses for the locks, to include staff time, are also funded from water resources appropriations and from user fees. 2008 user fees are set at $6.00 per day for boats less than 26 feet in length and $12.00 per day if larger. Seasonal passes can be obtained for $120. Commercial tour boats are charged a per-person fee as well. (Interview, FRSNA Chair, 2008).

Closure and Abandonment Provisions:

Wisconsin Act 16 requires that the Fox River System Navigational Authority hold sufficient funds in reserve to undertake abandonment should the repair and rehabilitation of the locks become infeasible. (Legislative Fiscal Bureau, 2001). On the day of the transfer ceremony, Post Crescent reporter Steve Wideman quoted then-FRSNA chair Ron Van De Hey as saying that the $11.8 million provided to the state by the Corps of Engineers must be set aside to fund potential closure, with the interest earned from that amount to be used for the locks operation. (Wideman, 2004). Local communities, however, objected to the Corps' plan to fill in the lock chambers. An architectural engineering firm, Mead and Hunt, were hired to conduct a

study of alternative abandonment strategies. The option ultimately selected[55] was estimated at $7.1 million. (Legislative Fiscal Bureau, 2001) This amount was to be held in reserve, with the interest earned used to help defray FRSNA expenses.

The Act also requires that FRSNA prepare an abandonment plan. The plan is to be reviewed by the Wisconsin Departments of Natural Resources and Administration who must determine whether the plan preserves public rights and ensures safety. (Legislative Reference Bureau, 2001)

Relationship of the Transferred Property to the Larger Navigation System:

Although the transferred facilities were originally part of the federally maintained Fox-Wisconsin Waterway, the commercial navigation function of the Waterway ended with the closure of Upper Fox River locks in 1962 and the termination of commercial traffic through the Lower Fox River locks in 1983. What remained of the navigation function was transferred from the Corps to the Fox River Navigational System Authority in 2004. (Cornerstone Preservation, LLC, 2007; Ellsworth, 2007) Consequently, there is no larger navigation system of which the Lower Fox River locks are now part.

LESSONS LEARNED:

Both the current FRSNA Chair and Executive Director were asked their opinions of what worked well and what should have been done differently that has not otherwise been identified above. Their thoughts:

- Planners contacted people involved with the Kentucky River locks transfer and learned from their experience. A key lesson learned from the Kentucky experience was not to accept the system "as is" from the Corps without a contribution of federal funds to help defray the cost of restoration. To avoid this, Wisconsin negotiated through the "208 disposition process" to ensure funds for rehabilitation would be provided.

[55] This option involved constructing a concrete or stone masonry fixed-crest gravity dam at the downstream end of each lock chamber. The crest was to be submerged six inches below the average low water flow to allow a minimum flow to pass over the dam at all times. The intent was to prevent stagnant water from collecting in the chambers and to provide the aesthetic of a series of cascading waterfalls through the system. (Legislative Reference Bureau, 2001).

- The process involved a long-term, "stepping stone" learning curve that took years to master. It got easier as participants came to better understand each others' needs, motives, and processes.
- Establishing a positive, constructive relationship with the Corps of Engineers is crucial. Initially, there was a lot of friction largely because of a lack of understanding of Corps processes and responsibilities. The more the state and local authorities understood Corps procedures and methods, the more effective they became at working with the Corps and Congress and the smoother the entire transfer process became.
- Establishing relationships with the congressional and state legislative delegations was equally essential. The process benefited from the fact that most of the representatives retained their seats throughout the 20-year process.
- *Friends of the Fox* played a key role in "keeping the idea alive" that the locks could be restored and operated, and provided the strategic vision of what restoration could mean to the region. They provided a combination of advocacy and political coordination, establishing close relationships with key state legislators that paved the way for state funding. Having an advocacy group that can take the plan and sell it to others was extremely important.
- Once the transfer occurred, FRSNA used requests for proposals to competitively bid design-build contracts for the restoration effort. They credit the design-build approach as succeeding in meeting project needs while keeping costs down.
- Close coordination with the local communities is important. Initially, local towns and counties ruled out using their tax revenues to support the project. However, as the project has progressed, that position has softened.
- There were no provisions in any of the agreement documents that proved to work against the transfer process. There were, however, details (like the real estate issues noted above) that would have benefited from better attention.
- The single biggest issue was the interaction between the numbers of participants. The challenge of managing the private, local, state, and federal parties was a "huge elephant" requiring a mechanism to coordinate and lead the effort. Establishing a steering committee early on and the ultimate creation of FRSNA were key success elements in managing the process.

- A variety of outside experts were called upon throughout the process to assist in a series of technical committees, review the work of others, and provide advice. These experts included engineers, hydrologists, planners, attorneys, and landscape architects.

FINDINGS AND CONCLUSIONS:

The preceding research leads to the following findings and conclusions as may be relevant to the Willamette Falls Locks:

- The Corps supported transferring the Lower Fox River facilities to non-federal parties, and supported the effort to obtain authorization for the transfer through WRDAs and supporting appropriations.
- Local citizen organization and involvement, particularly through *Friends of the Fox*, prompted and sustained political support for the transfer. Having a non-governmental organization to advocate, lobby, and promote the project is essential.
- State leaders and local planning agencies created and sustained a momentum that brought communities along the river together with the objective of preserving the historically and culturally unique and irreplaceable qualities of the locks.
- Early leadership by the governor's office and state legislature, and their eventual decision to become the accepting non-federal entity, provided the necessary organizational structure and a source of funding that might not otherwise have materialized.
- The combination of historical preservation and increased tourism created a compelling vision that the public, state and federal agencies, and elected officials could rally around.
- The state legislature, governor's office, and Congressional delegation of Wisconsin took a decisive lead in the negotiations, transfer dealings, and ultimate operations of the lock once transferred from the federal government.
- A series of formalized relationships between the state and federal government were established in support of the negotiations and eventual transfer, with each relationship focused on the task at the time. These included the Fox River Management Commission to operate the locks beginning in 1985, the Fox Locks Workgroup comprised of the Corps and state DNR and established to provide a joint response to the Corps disposition report, and the Fox River System Navigational Authority that is fully responsible to restore, operate and maintain the system.

- The state created a navigational improvement authority to manage long term funding, restoration activities, operations, and maintenance.
- The Lower Fox project restoration was nested and marketed within the context of a broader restoration effort of the Wisconsin Heritage State Parkway, which broadened the potential base of support.

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CHAPTER 6

SUMMARY OF FINDINGS AND CONCLUSIONS

INTRODUCTION:

This chapter synthesizes and summarizes the findings from the review of the current conditions at Willamette Falls Locks and the three case studies. Following the current conditions summary is an outline of nine key factors that contributed to the success of the transfers and subsequent operations in the three case studies examined. This section is then followed by an outline of areas of caution as recommended by case study interviewees or inferred by the authors from available records. The chapter concludes by consolidating these findings into five general themes. These themes in turn provide the basis for the design of the process map presented in Chapter 7.

SUMMARY OF CURRENT CONDITIONS AT WILLAMETTE FALLS LOCKS:

General:

The 136 year old locks at Willamette Falls, although rehabilitated over the years, will require substantial investment to effect needed repairs. However, they are in significantly better condition than were many of the facilities presented in the case studies. Many of the locks on the Fox, Muskingum, and Kentucky Rivers – which, like those at Willamette Falls, were originally built in the mid- to late-nineteenth century - were in greater disrepair or closed completely at the time of transfer. This, coupled with the fact that the locks in the case studies were components of navigation systems varying from 39 to about 255 miles in length, indicate that the magnitude of repair and cost of operation should be substantially less than the transfer experiences of the other locations.

Usage:

Recorded visitation to the museum and lock site between 2004 and 2007 has ranged from about 1,200 to about 13,000 visitor hours per year. This is a substantial reduction compared to the 24,000 to 55,000 annual visitor hours recorded between 1991 and 1999.[56] (See Table 2-1, page 14). This decrease is attributed to the following factors:

- Reduced staffing at the locks (See Table 2-3, page 17).
- Actual visitation in years of reduced staffing is likely higher than the recorded numbers indicate because visitor hours are only counted when staff is present.
- A large proportion of visitors in the 1990s were school groups who would take advantage of the guided tours offered by on-site staff. School group visits have all but ceased as the current staffing regime does not coincide with the school year.

The total number of vessels locked through Willamette Falls Locks decreased substantially from 3,001 in 2000[57] to 703 in 2005. (See Table 2-2, page 15). Vessels locked in 2006 and 2007 increased to 1,030 and 1,270, respectively, at least partially due to increased hours of operation made possible by supplemental funding provided by the Coalition. Recreational vessels account for between 77% and 87% of vessels locked through Willamette Falls Locks between 2000 and 2007. In general, annual lockages decreased in correspondence with reduced operating hours.

These numbers imply that some level of pent up demand for increased usage by the public may exist and that site usage may increase should the operating hours and on-site staffing be restored at or near previous levels. However, a more comprehensive assessment should be made regarding the level of demand that actually exists, so that long term revenues and operations and maintenance costs can be planned and balanced accordingly.

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[56] The 99,600 visitation recorded in 1995 is not included here for reasons stated in Chapter 2.

[57] The high number of boats passing through the locks in 2000 is attributed to high salmon returns that year and a corresponding increase in sport fishing.

Routine Operations and Maintenance:

Up through 1994, Willamette Falls Locks was staffed with seven personnel year-round to operate and maintain the locks and other facilities. Expenditures for 1994 were about $1.2 million. (See Table 2-3, page 17). Although staffing was reduced to three by 1997, full year operation continued through 1998. Operations were reduced to six months from 1999 to 2001. Further operational limitations on days and hours of operation were imposed from 2002 to 2007.

Operation and maintenance expenditures for those years of twelve-month operations (1995 – 1998, not including the flood damage repairs of 1996) averaged about $770,000 per year. Annual operation and maintenance expenditures for years of six-month operations average about $520,000. Of these amounts, the Corps estimates that an average of $300,000 was spent per year on maintenance. The BST Associates report (2005) estimates that annual operations and maintenance expenditures will likely need to increase to at least $424,000 due to deferred maintenance.[58]

These figures provide a starting point for determining expected operation and maintenance costs that would need to be assumed by the gaining entity should a transfer occur.

Maintenance Backlog:

There is no single, clear, concise assessment of maintenance backlog, although the 2007 INCA report and the Portland District's 2007 Annual Maintenance Report provide partial estimates of work needed (See Tables 2-4 and 2-5 on pages 19 and 21 respectively). A number of Portland District and project staff have informally opined that the actual amount of work to be done is likely higher. Additional information will be provided through the upcoming HSS study, scheduled to begin in the fall of 2008, although the scope of this study is limited to the structural steel components of the lock gates. Should the transfer be pursued, the gaining party would be well advised to seek a full accounting of necessary repairs and an estimate of the cost of those repairs as part of their due diligence effort.

[58] These figures are given in non-discounted, current year dollars.

Real Estate:

The estimated present value for Willamette Falls Locks land and structures is about $2.7 million as of 2008.

Title to the locks and buildings is held by the U.S. Army Corps of Engineers. However, the boundaries between properties owned or operated by the Corps, the West Linn Paper Company, Portland General Electric, and the Oregon Department of Fish and Wildlife are not clearly defined. Furthermore, easements are held by each of these parties allowing access across properties. These easements and other working relationships are complicated and not well-documented. The Corps estimates that obtaining necessary surveys and related real estate paperwork could cost approximately $35,000, although this figure should be independently verified.

Operating Constraints – Environmental:

The long history of the paper mill operation on the adjoining property and the operations and repairs of the locks will require an investigation into the possible contamination of the grounds before property is transferred to another party. Contamination concerns include the potential presence of asbestos in floor tile and caulking, lead paint in the buildings, ground contamination by lead paint scrapings, chromate copper arsenate in the old pressure treated lock timbers, and the risk of leaks from aging hydraulic lines. Due to the geology of the area, sediment contamination in the lock chambers is unlikely to be an issue. Before any transfer takes place, the requirements of CERCLA section 120 (h) (3) (A) (ii) and B will have to be met. At a minimum, a Phase 1 record search will have to be done, the cost of which is estimated by the Corps at $15,000. Should contaminants be found, a Phase 2 study will be necessary, the cost of which cannot be estimated until completion of the Phase 1 study.

All known underground tanks have been removed as of 2006.

A number of species listed or being considered for listing under the Endangered Species Act (ESA) migrate through or are found in the vicinity of Willamette Falls. Since the transfer would constitute a federal action, an assessment would have to be made as to whether that

"action" would adversely affect the status of the fish or their critical habitat. This is unlikely to be the case, but it is a step the Portland District may have to undertake and could add another layer of review and delay to a potential transfer. If it should prove necessary, a consultation with NOAA Fisheries could impose restrictions on terms of the transfer or future operation.

Almost all state and federal environmental regulations will still apply to the new operator should the transfer occur. All operations and maintenance activities will be required to comply with the regulations of federal, state and local agencies that enforce the Clean Water Act, CERCLA, the Resource Conservation and Recovery Act, and the Endangered Species Act. Additionally, should a "federal nexus" exist after the site is transferred (such as prolonged federal funding), the National Environmental Policy Act (NEPA) may apply for actions (such as a major rehabilitation project) that might adversely impact the environment. The specific obligations of the new owner under these laws and regulations should be identified during the due diligence effort.

Operating Constraints – Social and Cultural:

Willamette Falls Locks is listed on the National Register of Historic Places and is designated as a State Historic Civil Engineering Landmark by the History and Heritage Committee of the American Society of Civil Engineers. Consequently, all proposed actions will need to be fully coordinated with the State Historic Preservation Office. Additionally, the Falls are used by several Native American tribes for fishing, but the operation of the locks has no apparent impact on that activity.

Operating Constraints – Relationship with the Federal Navigation Channel:

The locks are part of a federal navigation channel between Portland and Corvallis that was first authorized in 1871. (See Table 2-6, page 25). The navigation project was never finished and is only 18 percent complete, with the reaches immediately above and below the locks last dredged in 1973. Consequently, it is unlikely that closure of the locks would generate more than local interest. However, this is an issue that should be addressed clearly in any legislation that is drafted for an eventual transfer. The due diligence effort should include contact with the local Coast Guard station, and review the appropriate regulations for their

obligations should closure occur. Alternatively, it is highly unlikely that the navigation channel will be federally maintained or improved beyond its current state. The lack of federal maintenance dredging for the river system upstream of the locks may impose eventual constraints on businesses who wish to move product via the river and through the locks.

SUCCESS FACTORS:

The following outline summarizes nine key factors which contributed to pre- and post-transfer success in the three examples studied. It is clear that securing a transfer of ownership will involve a lengthy process under the best of conditions. The case studies suggest that employing these factors can minimize that time.

1. *Early Organization:*
    - Develop clear goals and objectives. Development of a clearly articulated vision helps guide the transfer and operations processes and sustain stakeholder and political support. Advocates for the transfer of both the Kentucky and Fox River systems began by articulating a clear statement of what they wanted to achieve. For the Kentucky River, it was the goal of water supply and recreation. For the Fox River, it was restoration of an historic waterway to provide educational, recreational, and commercial benefits to the region. The pre-transfer vision for the Muskingum system is less clear due to the time since the transfer occurred and lack of online records.
    - Organize a leadership and advocacy-oriented support structure. A dedicated group of local leaders formally structured as an advocacy-oriented non-profit organization can provide the infrastructure to develop the vision, guide and educate the political process, solicit private donations as needed, educate newcomers to the process, and help facilitate state and federal agency action. The benefit of this grass-roots leadership is hard to overstate – they serve to motivate needed political support, facilitate and oversee agency processes, and promote the effort among potential stakeholders. This is best exemplified by the role played by Friends of the Fox in Wisconsin and the Kentucky River Association and Hazard Coal Operations Association in Kentucky. Formed shortly after the Corps declared its intention to

close those two systems, these groups provided the energy to forestall closure and, in the case of Friends of the Fox, ultimately guide the transfer process.

2. *Strong Stakeholder Support:*
    - Stakeholders include users, local community and business leaders, and others who may have an interest in the long term operation of the facility. Soliciting respected individuals with key business and political contacts helps orient political leaders throughout what will likely be a lengthy process.

3. *Strong Political Leadership and Support:*
    - In all three case studies, state governors, state legislators, and state Congressional delegation members were crucial to securing the transfers.
    - In the cases of Wisconsin and Kentucky, proponents for the navigation systems worked with Congressional delegation members who had significant seniority. Consequently, they were able to support pre- and post-transfer activities with federal funds through Congressional earmarks to the federal budget.
    - If a state ownership regime is adopted, active political support from the state legislature and governor can assist in identifying the appropriate ownership structure and establishing state funding sources. For Ohio, this meant placing the Muskingum system under the state Department of Natural Resources, funded through general appropriations. For Wisconsin and Kentucky, it meant creation of dedicated authorities for ownership and operation, and identification of both dedicated funding sources and funds from state appropriations (see *Dedicated Funding* below).

4. *State (or County) Ownership:*
    - It is highly unlikely that ownership by a non- or for-profit entity would be financially sustainable without government subsidy (see the Caution #2, below).
    - All three case studies, although they experimented with alternative arrangements, ultimately decided on state ownership.
    - Alternative arrangements included:

- Muskingum River: Operations were delegated by the Corps to local county commissioners, who subsequently delegated the operations to individual boat and bass clubs. The system failed due to inconsistent and uncoordinated operations and the lack of sufficient maintenance funding.
- Lower Fox and Kentucky Rivers: Leasing of operations by the Corps to the states. Although the states were able to set their own operational schedules, available Corps maintenance funding was insufficient to meet operational goals.

- Late in the process of preparing this report, it was discovered that a Corps-built lock and dam near Lafayette, Oregon, was transferred from the Corps to Yamhill County in 1959. Given that the scale of the project at Willamette Falls is much smaller than any of the case studies, the Yamhill County example may merit further investigation.

5. *Due Diligence:*
   - It does not appear that a detailed due diligence effort was made for the transfer of the Muskingum facilities in Ohio. As a consequence, the state agreed to transfer terms that placed a substantial financial burden on the state to restore the facilities to an operational condition.
   - Kentucky appears to have studied the Ohio example, and Wisconsin studied both. Consequently, Wisconsin was in a position to obtain far better transfer terms regarding deferred maintenance funding and abandonment.
   - The Muskingum transfer occurred before most of the current environmental laws were enacted. Consequently, understanding environmental responsibilities and having them fully documented in the transfer agreement can minimize potential long term costs.

6. *Detailed Planning:*
   - The Lower Fox River transfer exemplifies the benefits of detailed planning. Wisconsin established state organizational structures to guide both the pre-and post-transfer actions. They did detailed assessments of facility conditions and the historic aspects of the system, obtained environmental reports of contaminants, contracted for

their own cost estimates for restoration and abandonment, and developed a 30-year funding plan. Post transfer, they developed operations and maintenance plans to guide annual funding. This planning, coupled with their due diligence effort, enabled them to negotiate favorable transfer terms and have a long-term blueprint for post-transfer operations.

7. *Positive Relationships:*
    - In all three cases studied, relationships between the states and Corps became strained as soon as the Corps announced plans to close each of the systems. These strained relationships contributed, in part, to the long amount of time required for each transfer.
    - Available online records do not record the exact nature of the pre-transfer Corps-state relationship in Ohio. Interviewee statements that the relationship "is now good" imply that, at some point, it may not have been. Ohio enjoyed the shortest of the transfer periods studied (ten years).
    - In Kentucky, the relationship degenerated into a cycle of acrimonious accusations and lawsuits. The Kentucky process took over 50 years to complete.
    - In Wisconsin, according to interviewees, the relationship was strained but became better as each side gained an appreciation of the processes the other was obligated to follow. Impasses reached over disagreements on cost estimates were only overcome when negotiations were elevated. The entire process required over 20 years.
    - The key point for the Willamette Falls Locks is that the earlier the coordination on goals and the better the understanding of required processes, the higher the likelihood that the time for transfer can be minimized and that post operation coordination can be optimized.

8. *Informed Negotiation:*
    - Solid political support (Factor #3), detailed due diligence (Factor #5), and careful planning (Factor #6) will strengthen the position of the gaining entity in negotiating the most favorable terms possible.

9. *Dedicated Funding:*
    - The most successful of the transfers with regard to resources is the Lower Fox River system in Wisconsin. This system is funded by a combination of dedicated funding from motor fuel taxes collected from boat owners and allocated to the system, user fees as set by the Fox River System Navigational Authority, and private donations collected by Friends of the Fox and other fund raisers. It is also supported by general appropriations enacted to match federal funding and by interest earned from federal lump sum payments.
    - In contrast, the Muskingum system is only funded from general state appropriations. The system has suffered in recent years due to a downturn in the Ohio economy and the fact that the Muskingum River is but one park among many in Ohio vying for resources.

CAUTIONS:

The following "cautions" are provided to assist the transfer planning effort.

1. *Ownership:*
    - Transfer to a state authorized agency appears to be optimal. This will smooth the process, ensure long term viability, and provide for future funding (see Caution #2 on Funding, below).
    - Based on the case studies examined, transfer of federal property to a state has won congressional support as an exception to GSA property disposal rules. This support is expressed through language in the legislation authorizing the transfer. If not specified in the authorizing legislation, the GSA's excess property disposal provisions apply. These provisions seek to determine if a public purpose for the property exists and include the McKinney Act, which requires a review of potential housing of the homeless. Under the GSA process, if no public purpose for the property is found it would go out for bid.
    - It is not known at this writing if transfer to a county, special district, or any entity other than a state ownership would garner the same support.

2. *Funding:*
    - It is highly unlikely that user fees alone can be structured to completely fund ongoing operations and maintenance. Consequently, some stable funding stream will need to be identified. Public (state) funding was the preferred course of action taken in each of the case studies examined.
    - Note that in 1977, the Corps estimated that lockage costs on the Kentucky River system average $160 or $566 *per boat* (emphasis added) depending on which lock was used. The Kentucky River Authority estimated that cost to be $250 per boat in the early 1990s.
    - A cursory comparison of the average of the number of vessels passing through Willamette Falls Locks in 2006 and 2007 (1,030 and 1,270 respectively) with the anticipated annual operations and maintenance costs of $424,000 identified in the BST Associates report (2005) give an estimated cost of about $370 per boat, not including the cost of operational staffing.[59]
    - Consequently, there is a need to ensure sufficient demand for usage exists to warrant the investment in rehabilitation and long-term operation.

3. *Historical Designation:*
    - Historical designation is a mixed blessing.
    - Although designating a facility as an historical landmark or placing it on the National Register of Historic places provides promotional value and opens the opportunity for grants, those grants are not guaranteed.
    - Additionally, the designation carries with it operational constraints as all maintenance and operational plans must be consistent with the nature of the designation and approved by the state historical preservation office.

4. *Environmental Concerns:*

[59] Other estimates could be developed using different assumptions about usage and about which costs are being recovered. Recommend the Coalition develop more rigorous estimates as part of their feasibility study.

- Multiple species listed under the ESA are located in the vicinity of the Willamette Falls Locks.
- The historically industrial nature of the paper mill and surrounding area and past operations and maintenance at the site imply the potential for contamination, the liability for which any new owner might assume upon transfer unless mitigated before hand.

5. *Time for Transfer:*
    - Expect the process of transfer to be lengthy.
    - The transfer process in the case studies examined ranged from ten to fifty years. Even though the case studies involved navigation systems of multiple locks over many miles and the Willamette Falls facility consists of a set of locks at only one location, many of the procedural steps will be the same.

6. *Administrative Costs:*
    - Current Corps policy is to recover all administrative costs of a transfer, including real estate surveys and title searches, recording fees and the time for Corps personnel to accomplish the transfer from the gaining entity.
    - In order to avoid this cost, the authorizing and appropriating legislation must specifically state that these costs are to be born by the Corps. Note that the Corps of Engineers and the Department of the Army will likely officially oppose such language.
    - Environmental assessments will be required prior to transfer. Cost of a Phase I may be approximately $15,000. The Phase I could lead to a Phase II remediation, of which the cost is very difficult to predict.
    - Environmental investigation may identify adjoining landowners as Potentially Responsible Parties to bear the cost of clean-up of contaminated areas.

7. *Relationships:*

- A shared vision and full coordination with all state agencies, to include the governor's office, is critical. Disagreements within the state will add cost and time.
- Full coordination within the Corps throughout the chain of command (District, Division, and Headquarters) and the office of the Assistant Secretary of the Army for Civil Works (ASA (CW)) is critical to stay abreast of policy changes over time and come to an understanding of each others processes.

8. *Political Support:*
    - Strong Congressional support is vital. The current lack of Oregon representation on an Appropriations Committee may make the eventual task of securing federal funds more difficult.

9. *Real Estate:*
    - Ensure all existing easements are addressed and that titles are clear.
    - Clarify access to site with adjoining landowners.
    - Public Law 996, 84th Congress, 2nd Session provides precedence for disposal of obsolete waterway projects. P.L. 996 also contains (1) provisions for the expenditure of funds for use in preparing properties for disposal or abandonment, (2) preference to identified entities who might accept title and responsibility for ownership, (3) deferral of abandonment of certain structures until the Secretary of the Army determines structures are not needed for improvement plans (completion of ongoing feasibility studies). (Source: Disposition of Kentucky River, Kentucky Locks and Dams 5 Through 14, Communication from The Assistant Secretary of the Army (Civil Works), 1985, US Government Printing Office).
    - If normal GSA processes are used they must be in accordance with 41 CFR 101-47, Utilization and Disposal of Real Property, however the authorizing law can set special conditions.

SUMMARY: THE FIVE THEMES

The findings and conclusions discussed above can be summarized under five general themes to guide the transfer process. These themes are:

1. Transfer parties should develop a compelling vision and an advocacy-oriented support base to guide and lead the effort over time. As one interviewee explained, coordinating the multiple participants and processes involved in such a transfer is a major challenge. A clearly articulated statement of goals and expected benefits, promoted by passionate and dedicated advocates, assists in keeping all parties oriented on the goals to be achieved.

2. Transfer parties should expect a lengthy process. The time between inception and facility transfer ranged between ten and almost sixty years in the three case studies examined. Although the Willamette Falls Locks are significantly smaller in scale than the case study projects, the basic tasks to be accomplished are essentially the same. Sufficient time should be allowed for due diligence, planning, negotiation of suitable transfer terms and completion of the agency and legislative processes.

3. Participants should make a significant investment in planning for both pre- and post-transfer. The most successful of the case studies reviewed included planning that not only provided a clear picture of how to accomplish the transfer, but also resolved post-transfer funding and operational issues before the transfer took place. Thorough planning also allowed the recipient to negotiate transfer terms far more favorable than those obtained in previous transfers.

4. Participants should devote significant energy into building and sustaining support from stakeholders (users, local business leaders, community leaders) and government leaders (federal and state agency staff and elected officials) throughout the duration of the transfer process and on into ownership and operation. Stakeholders and government leaders are likely to change over the course of the process. Having an

institutionalized core leadership group, as described in 1 above, can sustain the effort and educate new participants who become involved in the project over time.

5. Participants should be prepared for an ongoing financial commitment, both pre- and post-transfer. Prior to transfer, funding is needed to maintain an advocacy organization and perform the due diligence necessary to protect the recipient. After transfer, funding is needed for ongoing operations and maintenance, repairs and rehabilitation, and to maintain the advocacy organization to promote use of the facility and maintain support necessary to meet ongoing funding needs.

These themes in turn suggest a process design to guide transfer activities. This process design is presented in the next chapter.

CHAPTER 7
PROCESS MAPS

INTRODUCTION:

This chapter builds on the information obtained through the review of conditions at Willamette Falls Locks and the case studies, and outlines conceptual process maps to guide the actions for transfer. Two process maps are provided. The first is from the perspective of the Corps District, and includes the normal process for a transfer of Corps property to non-federal owners and likely related legislative action. The second is a comprehensive process map and strategic planning model that is written from the perspective of a potential owner, and builds on the five themes identified in Chapter 6.

OUTLINE OF THE CORPS PROPERTY TRANSFER PROCESS:

The following outline identifies the steps and decision points normally taken by the Corps for routine transfers of property and related federal legislative action. Not included are likely corresponding state administrative and legislative action that will be required should a state agency be identified as the party receiving the property. Should the decision to pursue a transfer of the Willamette Falls Locks be made, a close working relationship should be established with the Portland District Real Estate Office and the Bonneville Project Office to follow and facilitate the Corps effort.

The steps in the process are not rigidly sequential – many can be initiated concurrently with others. They are written from the perspective of the Corps District. They are the steps the Corps must complete, but it would be important for the potential recipient to actively engage with the Corps at every stage in the process and begin this engagement as soon as the decision to pursue transfer is made. While all stages are important, two require special attention: negotiating the terms of the transfer with the Corps and working with Congress to ensure that authorizing

language includes the appropriate terms of the transfer and sufficient funding is appropriated. The steps in the Corps process are:

1. Determine that the property at issue is excess to federal government needs.
2. Identify the receiving entity.
    a. If no entity is identified who is willing and able to assume ownership then a disposition study may be initiated, pending availability of funds,. If this course is chosen, then the property is disposed of through GSA property disposal procedures.
    b. If a receiving entity is identified but **not** exempted from GSA disposal processes in the legislation authorizing transfer, then federal GSA procedures for processing excess property apply. The property will be screened for potential for housing for homeless (McKinney Act) and other public purposes. If there are no other public purposes for which the property can be put to use, then the property is put out for bid.
    c. If a receiving entity is identified go to step 3.
3. Enter discussions with state authorities wishing to accept transfer and begin negotiations for the terms of transfer.
4. Initiate what will be ongoing coordination with Division, Corps Headquarters, and the office of the Assistant Secretaries of the Army (ASA) for Civil Works (CW), and Installations and Environment (I&E).
5. Request Congressional authority and, if needed, appropriations.
    a. The authority to transfer Corps civil works property would normally be obtained along with other civil works authorities through the biennial Water Resource Development Act (WRDA). However, it should be noted that WRDA bills have not occurred biennially in the 2000s. Indeed, after WRDA 2000, there was not another WRDA bill until 2007.
    b. The legislation language authorizing transfer should be crafted to preclude GSA excess property disposal procedures.

c. Appropriations are made through a separate Energy and Water Development Appropriations Act, which follows enactment of WRDA.[60] Energy & Water appropriations bills are passed annually, as part of the normal federal budget and appropriations process.

6. Obtain funds for the administrative costs associated with the transfer. Current policy is that the receiving entity is required to pay any administrative costs associated with the transfer, such as CERCLA studies, title searches, etc.[61]
7. Complete Real Estate actions:
   a. Title search.
   b. Property survey.
   c. CERCLA Phase 1 record search.
   d. CERCLA Phase 2, if needed. This includes asbestos survey, lead, soil testing and analysis.
   e. CERCLA Phase 3, if needed. This includes mitigation. A Site Mitigation Plan is prepared and executed once funded.
8. Complete NEPA process determination.[62]
   a. If this is a major federal action as defined by NEPA, then conduct an Environmental Assessment. Issue either a Finding of No Significant Impact or develop an Environmental Impact Statement.
   b. If it is not a major action, go to step 9.
9. If repairs are authorized:
   a. Request budget for repairs through annual Congressional appropriations.
   b. Once appropriations are received, contract for repairs.
   c. If repairs are not authorized, go to step 10.
10. Prepare Findings of Suitability of Transfer (FOST) and FOST Deviation Reports.

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[60] It is possible, although very rare, for both authority and appropriations to be included in the same act.

[61] Payment of administrative costs by the receiving entity may be avoided if the authorization language requires that these expenses are to be born at Corps expense and the subsequent Appropriations Act provides such funding.

[62] A determination as to whether the transfer action will adversely affect species listed under the ESA or their critical habitat is not a routine part of this process. However, this possibility should not be ignored. Depending on circumstance, an ESA consultation may be required.

11. Prepare Quitclaim Deed and complete the deed checklist.
    a. Include Anti-Deficiency Clause and Non-Discrimination Covenant.
12. Route all documents through Division, Corps Headquarters, and ASA (I&E) for review for legal sufficiency and signature.
13. Obtain signature from State.
14. File deeds in appropriate county courthouse.

COMPREHENSIVE PROCESS MAP AND STRATEGIC PLANNING MODEL:

The process map and strategic planning model are diagrammed at Figure 7-1. Just as the Corps process outlined above was written from the perspective of the Corps District, this process is written from the perspective of proponents for the receiving entity. The process map is presented from start to finish, recognizing that the One Willamette River Coalition has been working for some time and that some of the listed actions may already be in progress. A description of the elements of the strategic planning model and each step in the process map are further outlined below.

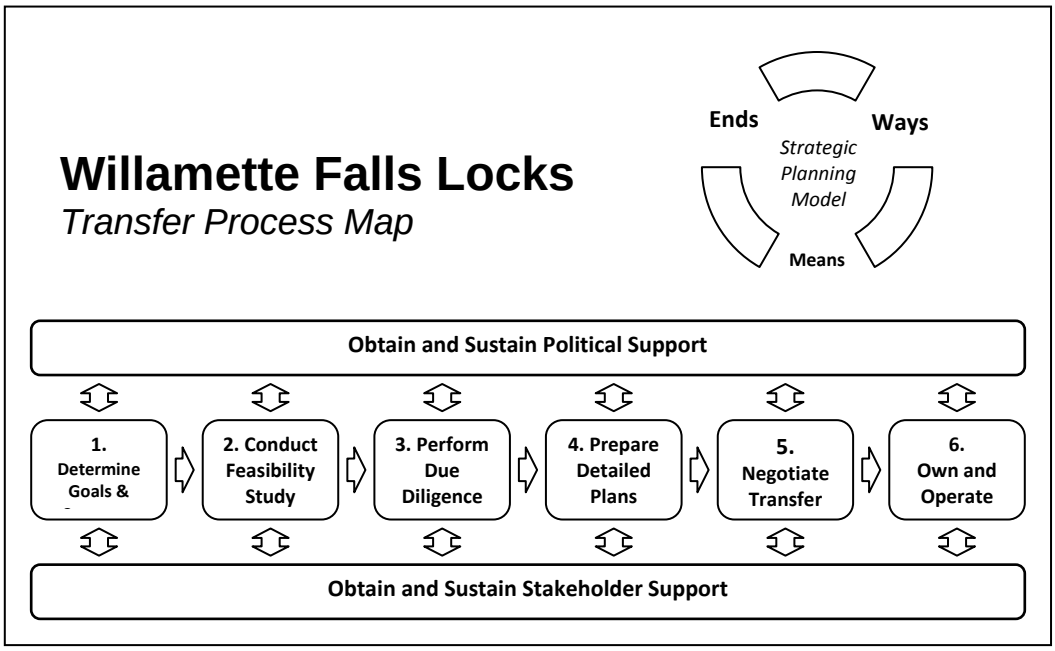
Elements of the Strategic Planning Model:

The strategic planning model illustrates the three generic components of a strategic planning: ends, ways, and means.

"Ends" are the goals and objectives to be achieved. They are a clear definition of what the ultimate product of the effort will look like. For the Willamette Falls Locks transfer, this would include a clear articulation of what the long-term operational status of the locks will be, the role of the locks in the broader context of the Willamette River, the ownership arrangements, the administrative and operational structure, and other information that allows participants, stakeholders, political leaders, and agency personnel to clearly understand what the effort is intended to achieve. In the process map, "Ends" are identified in the first step, "Determine Goals & Structure."

Figure 7-1.

Transfer Process Map and Strategic Planning Model



"Ways" are the processes and actions through which the desired ends are achieved. These processes and actions are articulated in steps 2 through 6 of the process map, from initial planning through ownership and operation.

"Means" are the resources available for carrying out the needed processes and actions. For the Willamette Falls Locks transfer, "Means" include funding, staffing (paid and volunteer), technology (applied by involved staff or hired consultants), and support from stakeholders and political leaders.

To be successful, these three elements must be revisited periodically and kept in balance. The process map is designed with the recognition that initial resources will likely be limited. The map envisions ever-increasing levels of planning thereby allowing the planning effort to keep pace as additional resources are able to be obtained over time.

Steps in the Process Map:

The process map shown in Figure 7-1 envisions eight steps. Six are generally sequential. Each should be substantially complete before the next can begin, and this includes ensuring that the resources necessary for the next step are either in hand or have a high likelihood of being available. The six sequential steps and the related actions are:

1. Determine outcome and structure. The product of this step is a clearly articulated vision of what is to be achieved and how it is to be managed once it is achieved. Actions here include:
    - Developing a clear articulation of the end-game vision of the effort.
    - Develop options for ultimate Willamette Falls Locks ownership and administrative oversight of the transferred facility.
    - Identify a core leadership team to guide the effort over what will likely be a very lengthy process.
    - Gather necessary information, such as provided through this report, the upcoming HSS study, and other sources as may inform the due diligence effort.
    - Begin to develop a supporting constituency of local businesses and community leaders. Seek to formally organize this group as a non-profit organization, along the lines of the *Friends of the Fox* in Wisconsin.
    - Begin to develop political support by reaching out with the vision and ownership options to affected agencies at the state and federal levels and elected officials.
        - Initiate coordination with the Corps to become familiar with the Corps process.
        - Initiate coordination with appropriate state agencies to become familiar with their process.
    - Determine and obtain the resources necessary for Step 2.

2. Conduct feasibility study. The product of this step is the determination of whether a transfer of ownership can reasonably be pursued. Questions to be answered in this step include:
    - Can the gaining entity be exempted from GSA property disposal procedures?

- Can the political will be developed and sustained over the long term in support of the transfer?
- Is there likelihood that sufficient local stakeholder support can be obtained and sustained over time?
- Can necessary funds be obtained from state, federal, local, and/or private sources to support the lengthy transfer process?
- What level of usage fees are users willing to support? What other long term sources of operating revenue are available?
- What are the estimated long term operations, maintenance, and capital costs to ownership?
- What is the estimated ratio between the foreseeable benefits and costs of successfully completing the transfer?
- What additional information is needed to proceed?
- What is the preferred model for ownership and administrative operation of the transferred facility?
- Are the resources for Steps 3 and 4 available?

3. Perform due diligence. The desired outcome of this step is the identification of risks and liabilities that will affect the transfer process and ultimate ownership and operation. Actions included in this step include:
   - Clarify real estate issues:
     - Search the title and resolve issues property boundaries, easements, informal and formal working arrangements with other site parties.
     - Perform surveys of property to delineate ownership boundaries.
     - Conduct a Phase 1 CERCLA study.
   - Determine the physical condition of the locks and related structures and assess the cost to bring them to an appropriate state of repair.
     - Obtain the results of the HSS study.
     - Review the INCA report.
     - Review the District maintenance reports.

    - Determine District maintenance expenditures for the previous two years and the nature of the work performed.
    - Obtain an independent assessment of the need for additional repairs beyond those identified above.
    - Obtain an independent assessment of the costs to carry out all necessary repairs.
- Determine the state and federal authorities necessary to affect the transfer and the process to obtain those authorities and potential regulatory constraints to ownership.
    - Initiate outreach to the appropriate elected officials whose support is needed to obtain those authorities.
    - Assess local, state, and federal permitting and other regulatory requirements as may affect ownership.
    - Determine the obligation that Coast Guard and Corps regulations would place on non-federal owners for both operations and if the locks eventually close and become a barrier to the federal navigation channel.
- Assess detailed long term operating costs.
- Assess availability of needed resources:
    - Identify sources of revenue (usage fees, federal appropriations, state appropriations, dedicated funding) for pre- and post-transfer activities.
    - Determine the likelihood that needed revenues can be realized and that they will sufficiently offset likely costs.
    - Compare costs and revenues; adjust goals and objectives accordingly.
    - Determine the degree to which outside expertise and technology may be required for additional studies.
    - Determine whether local stakeholder support can be obtained and sustained over time.
    - Determine whether political support from elected and agency officials can be obtained and sustained over time.
- Continue to develop the relationship with the Corps and state agencies and their staffs and state and federal elected officials and their staffs.

- Align sufficient resources to proceed to Step 4.

4. Prepare detailed plans. The planning effort builds on the information obtained through the feasibility study and due diligence efforts. The outcome of this step is a detailed picture of how the facility will be operated once transferred, how it will be maintained, and what support will be required from the state and federal governments. Actions in this step include:
   - Develop a business plan.
     - Refine estimates of projected usage, costs, and revenues.
     - Develop a marketing and promotion plan to increase usage.
     - Develop a long term funding plan, projecting 30 to 50 years into the future.
     - Coordinate with state and federal agencies and elected officials to identify funding sources, with the goal of obtaining dedicated funding to the degree possible (such as through dedicated user fees, motor fuel taxes, etc.).
     - Estimate the impact of fuel prices on future commercial and recreational usage of the locks.
   - Develop a political plan for obtaining long term state and federal political support.
     - Identify legislative "champions" to support and promote the effort from state and federal elected officials and their staffs.
     - Ensure that statutory language authorizing a transfer precludes the GSA excess property provisions.
     - Minimize the administrative costs to transferees by including appropriate language in both authorizing and appropriations legislation.
     - Assess the degree to which the transfer and operation of the Willamette Falls Locks relates to the State's transportation strategy.
     - Coordinate this plan with stakeholders and political leaders.
   - Develop an administrative plan for ownership and operation of the facility.
     - Identify the administrative requirements for both pre- and post- transfer.

        - If the facility is to be state or county owned, develop and coordinate the state legislation and local ordnances needed to bring that about.
    - Determine if resources are available to proceed to ownership. Reassess goals and objectives to be consistent with available resources.
    - Develop negotiating plan.
        - Determine the terms the owner would like to see in a transfer agreement. Such terms should include payment of administrative costs, the desired condition of the facility at the time of transfer (or consideration if repairs are to be made by the accepting party), easements and rights of way, etc.

5. Negotiate transfer. The desired outcomes of the negotiation are terms favorable to the owners, federal government, and local stakeholders. Promote support for the negation from local stakeholders and state and federal political leaders.

6. Own and operate. Implement the administrative and operating plans developed in step 4.

The two non-sequential steps are obtaining and sustaining stakeholder and political support throughout the process. These on-going efforts can be greatly facilitated by instituting a non-profit support structure as suggested in Step 1. Such an organization can lobby elected and agency officials, promote the effort via web sites and other media, and provide information to interested parties.

- Obtaining and sustaining stakeholder support. This on-going step involves and identifying users, local business and community leaders, and local officials. The intent is to obtain buy-in for the selected vision; provide information on the status of the process so they, in turn, can inform their constituents; provide them the information they need to lobby with state and federal political leaders; and solicit their advice and opinions as the process progresses. Post-transfer, local stakeholders can promote and support the operation of the facility throughout the local area.

- Obtaining and sustaining political support. This ongoing step involves close coordination with the state Congressional delegation, the governor's office, state legislators, and state and federal agency officials. The intent is to obtain buy-in for the selected vision and solicit their support throughout the pre- and post-transfer process. State support is needed to identify the appropriate ownership structure and obtain necessary state funding. Federal support from the Corps of Engineers, House of Representatives and the Senate will be needed to obtain desirable language in federal legislation from the appropriate authorizing and appropriations committee in each chamber.

CEDER

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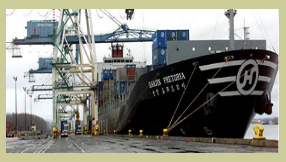
THE WILLAMETTE FALLS LOCKS: A CASE STUDY ANALYSIS OF POTENTIAL TRANSFER ISSUES



APPENDIX

ATTACHED REFERENCES

Articles of Agreement between United States of America and the State of Ohio dated June 27, 1958.

Fox River Navigational System Management Plan – 2006/2007.

Memorandum of Agreement between the Department of the Army and State of Wisconsin for the Transfer of Locks and Appurtenant Features of the Federal Fox River Project, Wisconsin, dated September 11th, 2000.

Quitclaim Deed for Disposal of Property, Kentucky River Locks and Dams 5, 7, 8, 9, 11, 12, 13, and 14, dated November 1, 2005.

APPENDIX

ATTACHED REFERENCES

The following documents are appended as potentially useful references to assist in the due diligence and planning efforts. Although considered by the authors to be of direct relevance to the Willamette Falls Locks transfer effort, they are not all-inclusive and do not constitute the full array of documents to be reviewed as part of the Willamette Falls Locks due diligence effort.

Articles of Agreement between United States of America and the State of Ohio dated June 27, 1958. This agreement, executed as a contract by the Corps' Huntington District, defines the terms under which the Muskingum system was transferred from the Corps to Ohio. This contract was apparently executed under the GSA disposal process in effect at the time of transfer; it did not formally process through Department of Army channels.

Fox River Navigational System Management Plan – 2006/2007. Prepared by the Fox River System Navigational Authority, this plan, prepared annually, outlines the goals, objectives, strategy, funding needs, work plan, and the context within which the system is operated and maintained.

Memorandum of Agreement between the Department of the Army and State of Wisconsin for the Transfer of Locks and Appurtenant Features of the Federal Fox River Project, Wisconsin, dated September 11th, 2000. The agreement demonstrates the favorable terms Wisconsin was able to negotiate with the Corps regarding federal funding.

Quitclaim Deed for Disposal of Property, Kentucky River Locks and Dams 5, 7, 8, 9, 11, 12, 13, and 14, dated November 1, 2005. The deed was executed by the Chief of Real Estate of the Corps' Louisville District, submitted through real estate channels to the Assistant Secretary of the Army, Installations and Housing, Department of the Army.