Coon Rapids Regional Dam Commission

Report

February 28, 2011

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Thank you

The Commission would like to thank all members of the public and agency staff that provided feedback to draft recommendations and otherwise provided information and expertise to the Commission.

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Executive Summary

Coon Rapids Regional Dam Commission

The Coon Rapids Regional Dam Commission was created by the 2010 Minnesota Legislature. The focus of the commission is to "study options and make recommendations for the future of the Coon Rapids Dam, including its suitable public uses, governance, operation, and maintenance and financing of the dam and its operations." A report to the governor and legislature was requested by March 1, 2011.

The commission included representatives from the Minnesota House of Representative and Senate; the Minnesota Department of Natural Resources; Metropolitan Council; Three Rivers Park District; Cities of Anoka, Brooklyn Park, Champlin, and Coon Rapids; and the counties of Anoka and Hennepin. The U. S. Army Corps of Engineers; U. S. Fish and Wildlife Service; and, National Park Service served as non-voting technical advisors. Three Rivers Park District provided commission support and the Management Analysis & Development group facilitated commission meetings and report preparation. Three Rivers Park District also maintained online information regarding commission meeting and information at: http://www.crdcommission.blogspot.com/.

Interest Areas

The commission members identified seven key interests to explore as they developed ideas to address the future of the Coon Rapids Dam. All members did not agree on the specifics or even the value of these seven interest areas but they became a framework for discussions. The seven interest areas were: 1) barrier for invasive species; 2) maintain the pool created by the dam for recreational use; 3) maintain the pool created by the dam for economic value and development; 4) maintain the pool created by the dam from an ecological perspective; 5) governance of the dam; 6) future funding strategies; and 7) option of hydroelectric power.

Coon Rapids Dam Fish Barrier and Improvements Preliminary Design conducted by Stanley Consulting (Stanley Report)

A presentation and report by Stanley Consulting, an engineering firm asked to study whether the Coon Rapids Dam could act as an effective fish (Asian carp)[1] barrier and research the cost for such work, was a critical piece of information the commission used to develop its recommendations. The report stated: "*An improved dam structure coupled with a modified upstream pool level operating procedure that maintains the summer recreational pool year-round would serve as an effective (fish) barrier approximately 99.9 percent of the time*[2]." The report estimated the capital cost for improvements to the dam total approximately $16.9 million.

[1] Asian carp include : black carp, bighead carp, grass carp, and silver carp

[2] Coon Rapids Dam Fish Barrier and Improvements Preliminary Design; Prepared for the Minnesota Department of Natural Resources by Stanley Consultants, Inc.; February 17, 2011

Concerns Discussed

The commission members discussed the opportunity the report presented and some of the concerns. A primary concern raised was that while a refurbished dam would significantly impede passage of fish, there was the possibility of fish passage at times of high river flows (greater than 60,000 cubic feet per second) or high tailwater conditions (the river backing up and rising to near the elevation of the pool) resulting from downstream ice jams. It was noted that high water flows occur about every 15 to 20 years. However, while tailwater condition records are not available, it was noted that such events have happened twice in the past five years with the lower winter pool operations currently required under the DNR permit.[3]

Additional concerns raised were: focusing on a single barrier to the invasive fish; the cost of the project; the impact of year-round high water level on property adjoining the pool created by the dam; and, maintaining the pool height during dam repair.

Commission Recommendations

Through a facilitated process attempting to meet the interests identified above, the commission developed the following recommendations. As non-voting members: the Army Corps of Engineers has no official position with respect to the commission's recommendations; the U.S. Fish and Wildlife Service offered technical assistance and the commission's final recommendations and goals should not be viewed as a reflection of any final opinion of the Service; and, the Mississippi National River and Recreation Area, National Park Service does not endorse this report or its recommendations. The commission developed the following recommendations, and proposed them as the final product.

1. **Complete a major refurbishment of the Coon Rapids Dam for a fifty-year or greater life span.** The Stanley Consultants Report on the dam as a fish barrier provides the blue print for this work. The report identifies several actions needed to make the dam a more effective invasive fish barrier including:

    a. Replace spillway gate system;
    b. Mitigate downstream scour; and
    c. Maintain recreational pool at summer level year-round.

    The Stanley Report identified a probable construction cost of $16.9 million.

    Additionally, the commission requests that the engineer planning the refurbishment work consider options to provide for safe construction methods that would improve the dam as a fish barrier and preserve the summer recreational pool during the construction period. This would allow for many of the current recreational opportunities provided by the pool to be minimally impacted during the construction period. A specific dollar amount was not identified because of the need to address safety issues with the work.

[3] See Appendix D for a question/response document presented to the Commission on this topic.

It is expected that this work on the almost 100-year-old dam will extend its lifespan for an additional fifty years. Further, the refurbished dam provides a significant component to the prevention of the spread of invasive fish (Asian carp) in Minnesota. Pursuant to the charge of the commission, our recommendation is refurbishment of the dam as an effective fish barrier. To protect Minnesota waters, federal and state agencies (Army Corps of Engineers, U.S. Fish and Wildlife Service, Minnesota Department of Natural Resources, and the National Park Service) have started meeting to discuss what can be planned to address the Asian carp issue. A system of barriers and other mitigation actions, with the refurbished Coon Rapids Dam as a component, provides the best option to slow down the advance of Asian carp in Minnesota.

The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

2. **Begin the work on the dam refurbishment as soon as possible.** The dam is almost one hundred years old. Two scour holes have been found and one repaired in the last 10 years. The current problematic gate system is 14 years old and will soon be out of warranty.

   Additionally, in the upper Midwestern United States, Asian carp have been spreading up the Mississippi River. A DNR spokesperson informally estimated that the carp could arrive at the Coon Rapids Dam in a range of two to ten years and he further noted that it was not a lot of time to address this issue. These fish have already been collected in the river in southeastern Minnesota and are established in the river along the Iowa border. As the fish move upstream, watersheds in southeastern Minnesota become vulnerable including the Lower Mississippi River, St. Croix River and the Minnesota River watersheds. All of these watersheds are below the Coon Rapids Dam and not in the scope of this commission's work. Potential waters in Minnesota above the dam that could be affected, primarily the Upper Mississippi River Basin, encompass roughly one-quarter of the state[4]. Included in the Upper Mississippi River Basin are the major lakes of Mille Lacs, Gull Lake, and Leech Lake plus other major watersheds along the Crow and Rum Rivers that flow into the Mississippi River. The Stanley Report states a three-year time frame from design until completion; making the project, even if started this year, not completed until the end of 2013.

   Due to repair work needed on the scour hole and gates on the dam, plus the concern regarding Asian carp, the refurbishment of the dam takes on a sense of urgency.

   The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

3. **Use state funds to complete the refurbishment work.** Limiting the migration of invasive fish species is a statewide issue impacting the multi-billion dollar[5] statewide annual fishing, water recreation, and tourism industries. A one-time capital investment of $16.9 million to help protect these industries is recommended. Funding options include use of bonding funds, Legacy funds, and other state funds.

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[4] See Figure 1 on page 14

[5] A 2006 American Sportfishing Association website states that Minnesota statewide generates over $2.8 billion in retail sales just from sportfishing alone. The website adds an additional $4.7 billion statewide which they classify as "total multiplier effect (economic output)." These numbers do not include any dollar amounts from recreational boating, wildlife watching and tourism. http://www.asafishing.org/statistics/saleco_trends/2006ei_all_state.html

As noted earlier, the dam is too far upstream to be a barrier for the entire state. However, there is a substantial part of these industries in the area[6] impacted by the dam. The influx of Asian carp would reduce the habitat for game fish; be a hazard to boaters, water skiers, and others involved in on-the-water recreation; diminish the area as a tourist draw; and, reduce property values on affected lakes and rivers. The return on the state's investment is not in the benefit or growth generated but in the prevention of economic loss and protection of a Minnesota way of life in these areas.

Refurbishment of the dam provides a relatively easy and timely way to start to address the issue. The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

4. **Keep the Coon Rapids Regional Dam Commission authorized in Chapter 361, Minnesota Session Laws, 2010 Regular Session in existence for up to 12 months to study and address the issues of governance, ownership, and operation of the dam.** The continued discussion on ownership, governance, and operations should not delay the refurbishment work on the dam. The Legislature, DNR and all affected local units of government should continue working together to facilitate such actions as the Coon Rapids Dam Fish Barrier and Improvements Preliminary Design conducted by Stanley Consulting and the work of this commission.

   Of the seven interest areas the commission identified to focus towards as they develop ideas to address the Coon Rapids Dam issues, the only area they could not reach consensus on was governance of the dam. It is anticipated that with additional discussion and information the commission can come to consensus on a governance recommendation.

   The Coon Rapids Regional Dam Commission agreed by a vote of 7 voting members present supporting and 3 voting members present against the inclusion of this recommendation in the report.

   Those supporting the inclusion of this recommendation are: Dale Homuth, DNR; Jeff Weaver, alternate for Department of Commerce; Steve Schmidt, City of Anoka; Mark Uglem, City of Champlin; Joe Sidoti, City of Coon Rapids; Natalie Steffen, Metropolitan Council; and John VonDeLinde, Anoka County.

   Those voting against inclusion of this recommendation are: Larry Blackstad, Three Rivers Park District; Marilynn Corcoran, Three Rivers Park District; and, Jerry Newton, former member of Minnesota House of Representatives.

5. **Refurbishment of dam should be done in such a manner as to not impede future installation of hydroelectric power.** The Stanley Report notes that hydropower potential will not be diminished by any of the proposed improvements to the dam. Keeping this option open allows for the opportunity to create an additional energy source and potentially provide revenue to help pay for dam maintenance and other operational costs.

   The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

[6] See Figure 1 on page 14

Introduction

The Coon Rapids Regional Dam Commission was created by the 2010 Minnesota Legislature in Chapter 361, Article 4, Section 71 (see Appendix A for a text of legislation). The focus of the commission is to "study options and make recommendations for the future of the Coon Rapids Dam, including its suitable public uses, governance, operation, and maintenance and financing of the dam and its operations." A report to the governor and legislature was requested by March 1, 2011.

The commission developed an assessment and made recommendations on the future of the Coon Rapids Dam. They considered, as required by legislation, a variety of economic, environmental, and ecological factors in their review and in developing the recommendations. These factors were discussed from both a local and a statewide perspective.

The Coon Rapids Regional Dam Commission, per statute, includes the following members:

- Members of the Minnesota House of Representatives: Representative Jim Abeler, Representative Jerry Newton
- Members of the Minnesota Senate: Senator Michael Jungbauer, Senator Leo Foley
- Commissioner of Natural Resources or Designee: Dale Homuth
- Commissioner of Commerce or Designee: Grady Kinghorn
- Representatives of Three Rivers Park District: Larry Blackstad, Marilynn Corcoran
- Representative of Hennepin County: Mike Opat
- Representative of Anoka County: John VonDeLinde
- Representative of City of Anoka: Steve Schmidt
- Representative of City of Brooklyn Park: Steve Lampi
- Representative of City of Champlin: Mark Uglem
- Representative of City of Coon Rapids: Joe Sidoti
- Representative of Metropolitan Council: Natalie Steffen
- Representative of the Mississippi River and Recreation Area: Paul Labovitz, who shall serve as a non-voting member
- Representative of the Army Corps of Engineers: Craig Evans, who shall serve as a non-voting member
- Representative of United States Fish and Wildlife Service: Richard Davis, who shall serve as a non-voting member

The non-voting members of the commission provided biological, ecological, engineering, and planning technical expertise and insight. The representative of the U. S. Army Corps of Engineers served as a non-voting liaison between the agency and the commission, and the Corps has no official position with respect to the commission's recommendations (see Appendix E). The U. S. Fish and Wildlife Service offered technical assistance and the commission's final recommendations and goals should not be viewed as a reflection of any final opinion of the

Service (see Appendix F). The Mississippi National River and Recreation Area, National Park Service does not endorse this report or its recommendations (see Appendix F).

Methodology

Three Rivers Park District (TRPD) provided assistance to the Coon Rapids Regional Dam Commission. TRPD contracted with Management Analysis & Development (MAD) a division of Minnesota Management & Budget, to facilitate the meetings and prepare a report of the commission's work.

The Coon Rapids Regional Dam Commission met 10 times from September 2010 through February 2011. This report is the result of commission deliberations. The meetings were open to the public, and additional people attended to listen to the discussions. Additionally, the commission held two meetings for public information and input. The commission, based on the legislation, developed the following purpose and scope.

Purpose

The 2010 Minnesota Legislature established a commission to advise the legislature and the governor on future options for the Coon Rapids Regional Dam.

Scope

The commission was charged with studying options and providing recommendations for the future of the dam including:

1) Suitable public uses;
2) Governance;
3) Operation;
4) Maintenance; and
5) Financing of the dam and its operations.

In reviewing options and developing recommendations, the commission must consider economic, environmental, ecological, and other pertinent factors.

To accomplish the scope, tri-chairs Larry Blackstad, Jerry Newton, and Mark Uglem were selected, and the commission developed a work plan for:

- Building common knowledge of Coon Rapid Regional Dam interests among commission members;
- Identifying and analyzing viable options; and
- Reviewing and discussing selected options to be developed into recommendations for presentation to the governor and legislature.

Initially meeting notes were compiled by the facilitator. Members wanted a more detailed record of the proceeding so formal minutes were taken for meetings held from November 25, 2010 through February 22, 2011. The complete notes and minutes can be found at: http://www.crdcommission.blogspot.com/

To start the discussion and build a common knowledge base, members were asked to identify their individual key interests (what matters to them) in addressing the Coon Rapids Dam issue. The individual ideas were shared, grouped into common themes, and the themes identified. The commission reviewed each of these interests as a way to understand the value of the dam and its impact to the entities involved.

The facilitator initiated the discussion on reviewing options by identifying four broad scenarios. The commission discussed these scenarios, rejecting some and expanding others until a few possibilities remained.

A presentation and report[7] by Stanley Consulting, an engineering firm asked to study whether the Coon Rapids Dam could act as an effective fish barrier and research the cost for such work, was a critical piece of information the commission used to develop its recommendations.

The commission provided two opportunities for conversations with the public. The first opportunity, held in November, was an open house to inform residents and other interested parties on the work of the commission. The second opportunity, held in February, was a forum where the commission members presented their draft recommendation and listened to the feedback and comments from the public.

The Coon Rapids Regional Dam Commission reviewed, deliberated, and selected a series of recommendations to address the issues created by the dam.

Background

The Coon Rapids Dam was built starting in 1913 by Northern States Power (NSP) to provide hydroelectric power. The dam generated power until 1966 and in 1969, what is now Three Rivers Park District (TRPD) acquired the 1,000-foot dam as a gift from NSP along with parkland on both sides of the dam. In 1975, Coon Rapids Dam Regional Park, including the dam and walkway over the dam, was incorporated into the Metropolitan Regional Park System.

[7] Coon Rapids Dam Fish Barrier and Improvements Preliminary Design; Prepared for the Minnesota Department of Natural Resources by Stanley Consultants, Inc.; February 17, 2011

Since TRPD acquired the dam, operation and maintenance have been an issue. Initial repairs were made to the dam in 1975 with funding assistance from the State of Minnesota. More substantial repairs were made in the mid-1990s, again with $6.2 million in funding assistance from the State of Minnesota and Metropolitan Council, resulting in a rebuilt walkway across the dam and the replacement of broken and twisted steel gates. These gates were replaced with a combination computerized rubber-gate system and steel control gate. In addition to the above water repairs to the dam, a scour hole was discovered on the underwater infrastructure of the dam and repaired in 2005, with funding assistance once again provided by the State of Minnesota.

In 1994, Anoka County entered into a lease with option to purchase agreement with the TRPD. The agreement is for a term of 30 years, extending through 2023. At the end of the agreement, TRPD will transfer their land on the Anoka County side of the river to Anoka County for continued operation as a regional park. As a condition of the agreement, Anoka County makes a $75,000 lease payment to TRPD which is deposited into a dam maintenance trust fund managed by the TRPD.

Recently another scour hole has been discovered and the need to repair the rubber gate system has been an on-going concern aggravated by the need to raise and lower the reservoir created by the dam each spring and fall.

TRPD operates the dam based on conditions of a permit issued by the Minnesota Department of Natural Resources (DNR). The permit calls for the control gates to be closed and the reservoir brought up to a specified elevation each spring and for the gates to be opened each year to lower the reservoir in the fall.

The dam provides a series of benefits including the formation of a recreational pool upstream of the dam and a walkway over the dam connecting trail systems on both sides of the river.
The Coon Rapids Dam scenic walkway connects Hennepin County and its regional parks with the Anoka County park system. The reservoir created by the dam is a 6-mile long recreational pool. The pool offers a variety of benefits to local residents and other recreationists including boating, fishing, swimming, scenic vistas, and wildlife watching. Additionally, the pool provides unique economic opportunities for the communities that border the pool including residential development, business development, and a variety of festivals and celebrations.

Interests

As noted earlier in the report, the commission members were asked to identify their key interests or things that mattered to them as they addressed the future of the Coon Rapids Dam. All members did not agree on the specifics or even the value of these seven interest areas but they became a framework for discussions on possible options to address the dam. The seven interest areas are:

Barrier for invasive species

The Coon Rapids Dam now acts as a partial barrier to upstream migration of fish. Maintaining and/or enhancing the Coon Rapids Dam provides a significant contribution to impeding passage of Asian carp[8] and other invasive species to the upper Mississippi River system. Further, it helps to maintain the unique differences in the natural fish communities that formerly existed above and below St. Anthony Falls, which served as the natural ecological barrier for this portion of the river. Since the early 1900s, a series of locks and dams have been constructed on the river to provide access for barge tows and other boat traffic along the Mississippi River from the Twin Cities to the Gulf of Mexico. These locks and dams have allowed movement of a variety of fish species up the Mississippi River.

Maintain the pool created by the dam – for recreational use

The pool created by the dam provides a range of boating and fishing recreational opportunities. Further the pool is the center of several local festivals and events. Additionally, the dam itself provides a regional trail connection between the Hennepin and Anoka County parks hiking and biking trails system.

Maintain the pool created by the dam – for economic value and development

A number of high valued properties border the pool created by the dam and provide a tax base to the communities. A large majority of the land along the pool is residential. Several of these communities have invested millions of dollars in redeveloping parts of the area. Coupled with the recreation opportunities of the pool, this allows tourism dollars to flow into the area.

Maintain the pool created by the dam – from an ecological perspective

The pool created by the dam provides habitat for wildlife in and around the water.

Governance of the dam

Provide a structure of authority and responsibility to oversee the repair, maintenance, and operation of the dam.

Future funding strategies

Establish a funding base for major repairs, ongoing maintenance, and day-to-day operation for the long-term existence (50+ years) of the dam. The funding base would be primarily public money.

Hydroelectric power

The dam produced electricity for Northern States Power (NSP) from 1914 to 1966, at which time operations stopped because it was no longer economical to generate electricity at the dam. In authorizing funds for the Coon Rapids Dam repair in 1994, the legislature required that "work on the Coon Rapids Dam be done in a manner that enhances the potential for future development of hydropower at the site" (Minnesota Session Laws 1994, Chapter 643). An option may be to build/rebuild a hydroelectric plant that would generate power for more than 4,000 homes and potentially provide revenue to help pay dam maintenance and rehabilitation costs.

[8] Asian carp include: black carp, bighead carp, grass carp, and silver carp

A brief review of each of the interests was presented to the commission to help them understand the topic and to continue the dialog on how the dam impacts each of these areas. Additional research and documentation was limited so discussions were primarily subjective.

Scenarios

The Coon Rapids Regional Dam Commission developed scenarios as a way to identify options for the dam. The scenarios were created to capture a range of possibilities and inform the decision-making of the commission.

The facilitator initially proposed four wide-ranging scenarios. They included:

- **No dam,** the dam is removed;
- **Status quo**, no change in current operation, the dam is owned and maintained by Three Rivers Park District;
- **New dam**, a completely new dam is built on same location; and
- **Refurbished dam**, the dam is repaired, remodeled, restored for a longer life span.

No dam and status quo

The “no dam” and “status quo” scenarios were ultimately removed from the list of scenarios to consider. The status quo scenario was removed without much discussion. Commission members noted that in doing nothing, the dam would ultimately deteriorate and the options would subsequently become a defacto no dam scenario.

The no dam scenario was removed from the list with zero votes opposing the scenario’s removal. However, the commission did have a discussion on removing this scenario. Those supporting the removal of the scenario noted that if the dam were removed, the pool behind the dam would no longer exist. They stated this would change the recreational use of the river and have a negative economic impact on the area. Other reasons stated for supporting the removal of the no dam scenario were: removal of a potential barrier (the dam) for the movement of invasive species up the Mississippi River; loss of the potential hydroelectric generation option without the dam; and the loss of the pedestrian trailway across the dam connecting trails in Anoka and Hennepin County.

Those members of the commission who talked against removing the no dam scenario were primarily the non-voting members. They stated that the no dam scenario should be included in the commission's review to provide a complete and sound planning process. It was argued that the scenario at least be considered because dams have a significant impact on a river system and that removing the dam may be a key factor in protecting and restoring our river resources. Further, it was noted that without review of the effects of the dam's removal, the commission could not determine if the loss of the pool would be adverse or beneficial to the recreational use overall. Additionally, if the river was restored to its natural state, they argued, new recreational opportunities would be available and in-turn, tourism and economic opportunities would still exist.

It was also noted that the no dam option has to be a possible scenario in order to apply for federal funding.

Refurbish dam and new dam

The remaining two scenarios were discussed and expanded. The "refurbished dam" scenario was expanded into three options including:

- Major refurbishment of the dam for a 50+ year lifespan and provision for ongoing maintenance;
- Do repairs only for critical damage to the dam, do periodic repairs to dam over time as issues or critical damage arise, and a provision for ongoing maintenance; and
- Major refurbishment of the dam (similar to the first bullet) but not excluding the option for the dam to someday provide hydroelectric generation.

The "new dam" scenario was expanded to include an option for hydroelectric power generation.

All four remaining scenarios were reviewed against the interests identified by the commission members. Members noted that each of the scenarios would maintain the pool behind the dam and continue to offer the recreational and economic opportunities that currently exist. However, it was also stated that each of these options would give up the opportunities (both recreational and economic) provided by having a free flowing river.

The ecological interest received contradictory comments from members. Some members stated that keeping a dam would maintain the current species diversity while other members noted that a dam throws the river equilibrium off and therefore has a negative impact on species diversity. It was mentioned, that without a dam, a natural river provides a better ecosystem. As noted earlier, without review of the no dam option, the commission did not compare the ecological value of the pool created by the dam and the option to have a free flowing river.

The scenario gaining the most interest was to refurbish the dam for a 50-year lifespan. The key points for this scenario were maintaining the pool and the identified benefits. However, a larger outlay of funds is needed for the initial work but should provide lower maintenance costs over time.

The scenario of doing only critical repairs as needed generated comments from members that cost would be initially lower and that cost would be spread over a longer period of time. Spreading out the cost over a number of years could lessen the financial burden during these difficult economic times. Other comments noted drawing out the work would actually create higher long-term costs and a future of uncertainty on what else would happen with the aging dam and at what cost.

It was intriguing to some members that the scenario to do major refurbishment of the dam did not preclude the ability of the dam to generate hydroelectric power in the future. If pursued, the considerable capital development cost of approximately $30 million and the multi-year licensing process authorizing the reestablishment of the Coon Rapids Dam as a hydroelectric generating facility are issues that would need to be addressed. It was noted a hydroelectric facility at the dam could create as much as 44,000 megawatt hours of energy annually if the pool were held constant at the summer elevation and could over time cover capital investment costs and provide significant positive net revenues, depending on such factors as energy rates, incentives, and interest rates. One of the members of the commission wanted to be sure this scenario was considered when discussing the refurbishment or new dam scenarios; however, initial capital costs would be less if constructed as part of the dam rehabilitation project.[9]

Because of limited time for discussion, the new dam scenario was not discussed in length other than to keep open the option for inclusion of hydropower if a new dam were to be built. A concern with the new dam scenario was the high cost of building the dam. Such cost would also need to include the removal of the old dam.

Barrier for invasive species interest area

The "barrier for invasive species" interest was discussed in length for all the scenarios. With the dam in place, it provides some level of a barrier from keeping various aquatic invasive species from moving upstream. The most commonly mentioned invasive species is the Asian carp that because of their size, being extremely prolific, and consuming vast amounts of food have become a concern of those managing the Mississippi River basin. The carp have been moving northward up the river and in some areas becoming the most abundant species.

The Coon Rapids Dam became more of a barrier consideration in February 2010 when, at the request of Three Rivers Park District, the Minnesota Department of Natural Resources (DNR) sent a letter to the park superintendent stating that they (DNR) viewed the dam as a "unique opportunity to prevent the spread of Asian carp and other invasive species to the upper Mississippi River system." A copy of the letter is in Appendix B. Because of the DNR's interest in the dam, a preliminary design was undertaken to examine the prospect of using the dam as an effective invasive fish barrier. Stanley Consulting, an engineering firm that had previously worked on the dam, was contracted to do the review.

[9] *Coon Rapids Dam Hyroelectric Project Preliminary Economic Analysis* prepared by Stanley Consultants; 3/1/2009

It was determined that further discussion on the barrier for invasive species interest and the future of the dam itself would be greatly aided by the report commissioned by the DNR. A preliminary report from Stanley Consultants was presented to the commission on January 11, 2011.

Coon Rapids Dam Fish Barrier and Improvements Preliminary Design conducted by Stanley Consulting

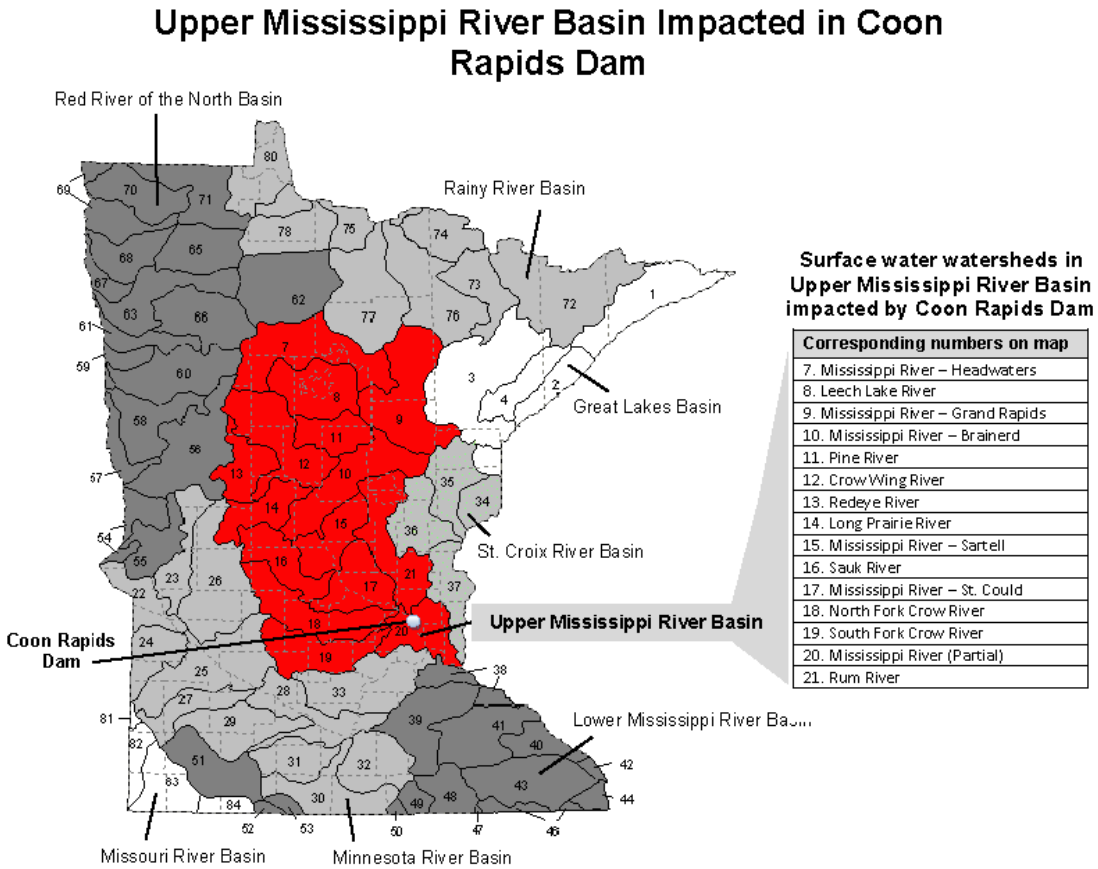
Presentation

The Coon Rapids Dam Fish Barrier and Improvements Preliminary Design[10] conducted by Stanley Consulting (Stanley Report) looked at three areas: 1) effectiveness of the dam as an invasive fish barrier; 2) current condition of the dam; and, 3) improvements needed to the dam and their respective costs. In a nutshell, the consultants reported that a $16.9 million upgrade to the dam and maintaining the current summer pool elevations year-round would significantly improve the effectiveness of the dam as a barrier against invasive fish species like Asian carp. See Appendix C for the Executive Summary of this report.

The report quoted the DNR stating: "Asian carp have the potential to cause extensive and irreversible changes to the aquatic environment, thereby jeopardizing the long-term sustainability of native aquatic species, including threatened and endangered species." The carp have been spreading up the Mississippi River at an alarming rate. According to the report, they are established in the Mississippi River below Dubuque, Iowa and there have been recent sightings as near as Lake Pepin in Minnesota. The fish are fast swimmers (a 25 feet per second burst velocity) and can leap up to 10 feet. Most of the Upper Mississippi River Basin above the Coon Rapids Dam could be affected. This basin serves the major lakes of Mille Lacs, Gull and Leech plus other major watersheds along the Crow and Rum Rivers. Additional watersheds that flow into the Mississippi River are also affected (see Figure 1, page 14 for a listing of watersheds). As stated above, the Asian carp are detrimental to native fish species and, because of their habit of jumping out of the water when frightened, are a hazard to boaters, water skiers, and other water recreationalists.

[10] For a copy of the full report go to: http://files.dnr.state.mn.us/publications/waters/coon_rapids_dam_final_report_20110217.pdf [Note: this report is very large, 36 Mb, and may take time to download]

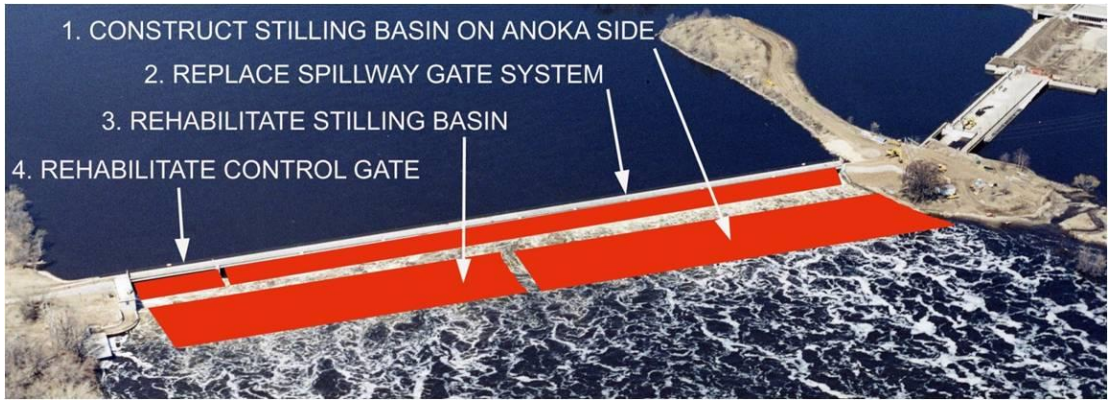
Figure 1



Minnesota's watershed basins; this map shows the 8 major basins (labeled) and 81 major surface water watersheds (there are none numbered 6, 45, or 64 in Minnesota): from Minnesota DNR.

To improve the effectiveness of the dam as a fish barrier, the dam would need to have the current rubber gates replaced with hydraulic or pneumatic steel gates. Further, a scour hole found in the apron of the dam last year would need to be included in the repair work to maintain the integrity of the dam. The estimated extended lifespan of the dam with the proposed upgrades would be fifty-plus years (see Figure 2 below).

Figure 2



Proposed work to be done on Coon Rapids Dam

Once the dam is repaired, a key piece to improve the effectiveness of the dam as an invasive fish barrier is to maintain the pool level at its higher summer level year round. This would reduce the opportunity for fish to swim or leap over the dam and move upstream. With the water at the higher level, the report noted that the vertical drop and the velocity of the water coming over the dam makes it impassable for these fish to move upstream under most, but not all, flow conditions. If the water were lowered, as is done now in the wintertime, this would decrease the drop and velocity making the dam less effective as a fish barrier. The water level is lowered now during winter months to reduce property damage along the pool created by ice in the winter and ice jams during spring thaws.

Two other matters raised by the consultant: 1) the projected timeline for doing the work would be roughly three years including design work and procurement of the gate system; and, 2) the water level would be lowered on the river for two years to do the actual construction work on the dam. The consultant also noted that hydropower potential for the dam would not be diminished by any of the proposed repair work on the dam. Additional work on the dam, beyond the scope of the Stanley Report, would need to be done to allow for electrical generation.

The report concluded that:

> *"A modified [Coon Rapids] dam and modified operating procedure would be a significant contribution to impeding passage of invasive fish passage. However, it should be noted that fish passage may still be possible under very high river flow conditions and abnormally high tailwater conditions resulting from downstream ice jams."*[11]

Discussion

A system of potential barriers to Asian carp

Following the presentation by the consultant, commission members raised questions and discussed the implications of the report over a series of meetings. A commission member raised the point that several federal and state agencies (Army Corps of Engineers, U.S. Fish and Wildlife Service, Minnesota Department of Natural Resources, and the National Park Service) had started meeting to discuss what the agencies have planned for addressing the Asian carp issue. He noted that no Asian carp plan had been developed for the Twin Cities area and there was strong interest in developing a plan that would include both short-term and long-term solutions.

The National Park Service representative noted that because of the location of the Coon Rapids Dam (roughly one-third the way up the Mississippi River in Minnesota), if it was the only fish barrier on the river, most of the southern part of the state would be susceptible to the influx of Asian carp. This would leave the tributaries of the Lower Mississippi River, St. Croix River and the Minnesota River without protection. Additionally, it was noted that other structures on the river could potentially be barriers to the carp, although not without potentially negatively impacting navigation (both commercial and recreational). Those structures included Lock and Dam One (at the Ford Bridge in St. Paul) and the Upper and Lower St. Anthony Falls Locks and Dams (in Minneapolis). The vertical drop at these locations would be sufficient to act as a

[11] Coon Rapids Dam Fish Barrier and Improvements Preliminary Design; Prepared for the Minnesota Department of Natural Resources by Stanley Consultants, Inc.; February 17, 2011; page 1-1

potential barrier. Additional locks and dams exist along the Mississippi River from the Twin Cities to the Minnesota/Iowa border but the Army Corps of Engineers representative noted none of these below Lock and Dam One could alone act as a sufficient barrier.

The major concern with the use of the series of locks and dams on the river as fish barriers is the use of the lock to allow boat and barge traffic to move from one portion of the river to the next. Fish can lock through with boats thereby negating any barrier opportunity, although the frequency of fish locking through has not been documented. It was noted that there is no current authorization to close a lock or several locks based on the risk of migration of an invasive species. This option has not been fully explored other than a comment that such an authorization would take a vote of Congress. Additionally, the authorization could be opposed by business and industries that depend on waterborne access and stakeholders that use or benefit from using the locks. The Army Corps of Engineers OMNI reporting system shows that the five-year average (2006 – 2010) traffic at Lock and Dam One included 960,000 tons of cargo and 4,000 recreational craft each year.

The Coon Rapids Dam is a dam only and does not allow boat passage. At the current time, it is the farthest point up the Mississippi River that boats can continuously travel.

Effectiveness of barrier[12]

At the presentation, the Stanley Report noted that with the new gates in place and modified operations (keep at summer high water level year round) that the dam would be 99.9 percent effective as a fish barrier. Commission members discussed the process for determining such effectiveness and that the modified dam would not guarantee that Asian carp could not pass upstream. A DNR representative noted that the modified dam is a barrier up to a flow of 60,000 cfs and that such flows have occurred over the study period (79 years) once every 15 to 20 years.

Additionally, the DNR representative noted that a cause for concern with the barrier's effectiveness is ice dams in the river downstream of the dam. In these instances, water backs up on the downstream side of the dam to levels near the dam's crest elevation under the lower winter pool operations as currently required by DNR permit. Records on this type of occurrence are not available so a long-term analysis of these events is not possible. It was mentioned that such events have happened twice in the past five years; however, it was noted that with the new gate system and the year round summer pool level operating plan for the dam, these occurrences could possibly be reduced. To ensure that the gates are retained in a position to maintain the higher summer recreational pool elevation during the winter, the Stanley Report recommends replacing the rubber gates with hinged crest gates which allow water to pass over the top and are much less likely to be affected by ice and debris. Additionally, the report recommends the addition of an ice suppression system on the main spillway to prevent the formation of ice against the gates.

[12] See Appendix D for a question/response document presented to the Commission on this topic.

Return on investment

A commission member commented that spending $16.9 million on the dam for repairs seemed worthwhile to help protect a statewide multi-billion dollar[13] industry in Minnesota. Additionally, the consultant noted during the presentation that the project would generate around 100 jobs.

A commission member raised the question that the multi-billion dollar amount was too high in considering return on investment. The number should be lower because the dam would only protect the Upper Mississippi River Basin watershed and then only a portion of that watershed. It was argued that if the carp reach the Coon Rapids Dam, they would have already advanced into the lower portions of the Mississippi River watershed including those of the Minnesota and St. Croix Rivers. Additionally, they could not advance into such watersheds as the Red River, Rainy River and Great Lakes via the Mississippi River. Further, it was noted, that dams on the Mississippi River and other rivers feeding into the Mississippi River above the Coon Rapids Dam could potentially be barriers to further carp advancement. Without further study, their value is unknown.

Maintaining pool height during dam repair

Another commission member asked the Stanley consultant if a cofferdam could be used to maintain the recreational pool during the construction period. The consultant responded that a higher cofferdam might be an option but there are significant potential safety concerns. He stated that the report will recommend that the pool be lowered during construction to primarily deter risks as well as reduce construction costs. He indicated that the higher cofferdam option was considered for the 1995-96 repair and if using a similar design strategy, the additional cost could be $300,000 to $400,000; however, a cost estimate was not verified as part of the design study.

Impact of year-round high water level on property adjoining the pool

A member raised a concern about the impact that the year-round higher water level would have on homeowners and other landowners whose property adjoins the pool. With the water level higher in the winter months, ice could impact landscape work and erosion control efforts. The issue was heightened during the public comment period when a homeowner along the pool stated that higher water levels could flood his home. Without a systematic property assessment, it is unknown the number of dwellings that could be impacted and what additional costs would be incurred for easements.

[13] A 2006 American Sportfishing Association website states that Minnesota statewide generates over $2.8 billion in retail sales just from sportfishing alone. The website adds an additional $4.7 billion statewide which they classify as "total multiplier effect (economic output)." These numbers do not include any dollar amounts from recreational boating, wildlife watching and tourism. http://www.asafishing.org/statistics/saleco_trends/2006ei_all_state.html

Public Comment Opportunities

The commission offered two opportunities for the public to be informed on their work and to provide feedback on the draft recommendations. The first meeting, an open house, was held in November 2010 to inform residents in the area the focus of the commission. An estimated 300 people attended. The commission's scope and list of identified interest areas were shared with the attendees. Those attending could talk with commission members and were asked to complete a questionnaire on how they were impacted by the dam, what additional interests the commission should consider, and other dam related concerns. More than 130 questionnaires were returned and the comments contained were reviewed by the members.

The second meeting was a public forum where the commission shared what they did and reviewed the draft recommendations they were developing. An estimated crowd of around 80 people attended. Information was presented on the dam, the reason for the commission, the preliminary Stanley Report, and the recommendations the commission was drafting to present to the legislature and governor. Members of the public had the chance to ask clarifying questions and provide feedback on the draft recommendations.

Both the returned questionnaires and the feedback comments from the two public comments meeting can be found at: http://crdcommission.blogspot.com/

Recommendations

The Coon Rapids Regional Dam Commission recommends the following actions:

1. **Complete a major refurbishment of the Coon Rapids Dam for a fifty-year or greater life span.** The Stanley Consultants Report on the dam as a fish barrier provides the blue print for this work. The report identifies several actions needed to make the dam a more effective invasive fish barrier including:

    a. Replace spillway gate system;
    b. Mitigate downstream scour; and
    c. Maintain recreational pool at summer level year-round.

    The Stanley Report identified a probable construction cost of $16.9 million.

    Additionally, the commission requests that the engineer planning the refurbishment work consider options to provide for safe construction methods that would improve the dam as a fish barrier and preserve the summer recreational pool during the construction period. This would allow for many of the current recreational opportunities provided by the pool to be minimally impacted during the construction period. A specific dollar amount was not identified because of the need to address safety issues with the work.

    It is expected that this work on the almost 100-year-old dam will extend its lifespan for an additional fifty years. Further, the refurbished dam provides a significant component to the prevention of the spread of invasive fish (Asian carp) in Minnesota. Pursuant to the charge of the commission, our recommendation is refurbishment of the dam as an effective fish barrier.

    To protect Minnesota waters, federal and state agencies (Army Corps of Engineers, U.S. Fish and Wildlife Service, Minnesota Department of Natural Resources, and the National Park Service) have started meeting to discuss what can be planned to address the Asian carp issue. A system of barriers and other mitigation actions, with the refurbished Coon Rapids Dam as a component, provides the best option to slow down the advance of Asian carp in Minnesota.

    The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

2. **Begin the work on the dam refurbishment as soon as possible.** The dam is almost one hundred years old. Two scour holes have been found and one repaired in the last 10 years. The current problematic gate system is 14 years old and will soon be out of warranty.

    Additionally, in the upper Midwestern United States, Asian carp have been spreading up the Mississippi River. A DNR spokesperson informally estimated that the carp could arrive at the Coon Rapids Dam in a range of from two to ten years and he further noted

that it was not a lot of time to address this issue. These fish have already been collected in the river in southeastern Minnesota and are established in the river along the Iowa border. As the fish move upstream, watersheds in southeastern Minnesota become vulnerable including the Lower Mississippi River, St. Croix River and the Minnesota River watersheds. All of these watersheds are below the Coon Rapids Dam and not in the scope of this commission's work. Potential waters in Minnesota above the dam that could be affected, primarily the Upper Mississippi River Basin, encompass roughly one-quarter of the state. (See Figure 1 on page 14) Included in the Upper Mississippi River Basin are the major lakes of Mille Lacs, Gull Lake, and Leech Lake plus other major watersheds along the Crow and Rum Rivers that flow into the Mississippi River. The Stanley Report states a three-year time frame from design until completion; making the project, even if started this year, not completed until the end of 2013.

Due to repair work needed on the scour hole and gates on the dam, plus the concern regarding Asian s, the refurbishment of the dam takes on a sense of urgency.

The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

3. **Use state funds to complete the refurbishment work.** Limiting the migration of invasive fish species is a statewide issue impacting the multi-billion dollar statewide annual fishing, water recreation, and tourism industries. A one-time capital investment of $16.9 million to help protect these industries is recommended. Funding options include use of bonding funds, Legacy funds, and other state funds.

   As noted earlier, the dam is too far upstream to be a barrier for the entire state. However, there is a substantial part of these industries in the area[14] impacted by the dam. The influx of Asian s would reduce the habitat for game fish; be a hazard to boaters, water skiers, and others involved in on-the-water recreation; diminish the area as a tourist draw; and, reduce property values on affected lakes and rivers. The return on the state's investment is not in the benefit or growth generated but in the prevention of economic loss and protection of a Minnesota way of life in these areas.

   Refurbishment of the dam provides a relatively easy and timely way to start to address the issue. The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

4. **Keep the Coon Rapids Regional Dam Commission authorized in Chapter 361, Minnesota Session Laws, 2010 Regular Session in existence for up to 12 months to study and address the issues of governance, ownership, and operation of the dam.** The continued discussion on ownership, governance, and operations should not delay the refurbishment work on the dam. The Legislature, DNR and all affected local units of government should continue working together to facilitate such actions as the Coon Rapids Dam Fish Barrier and Improvements Preliminary Design conducted by Stanley Consulting and the work of this commission.

[14] See map on page 16

Of the seven interest areas the commission identified to focus towards as they develop ideas to address the Coon Rapids Dam issues, the only area they could not reach consensus on was governance of the dam. It is anticipated that with additional discussion and information the commission can come to consensus on a governance recommendation.

The Coon Rapids Regional Dam Commission agreed by a vote of 7 voting members present supporting and 3 voting members present against the inclusion of this recommendation in the report.

Those supporting the inclusion of this recommendation are: Dale Homuth, DNR; Jeff Weaver, alternate for Department of Commerce; Steve Schmidt, City of Anoka; Mark Uglem, City of Champlin; Joe Sidoti, City of Coon Rapids; Natalie Steffen, Metropolitan Council; and John VonDeLinde, Anoka County.

Those voting against inclusion of this recommendation are: Larry Blackstad, Three Rivers Park District; Marilynn Corcoran, Three Rivers Park District; and, Jerry Newton, former member of Minnesota House of Representatives. (See Appendix F)

5. **Refurbishment of dam should be done in such a manner as to not impede future installation of hydroelectric power.** The Stanley Report notes that hydropower potential will not be diminished by any of the proposed improvements to the dam. Keeping this option open allows for the opportunity to create an additional energy source and potentially provide revenue to help pay for dam maintenance and other operational costs.

   The Coon Rapids Regional Dam Commission agreed by consensus of voting members present for inclusion of this recommendation in the report.

Appendix A

CHAPTER 361--S.F.No. 3275

Sec. 71. **COON RAPIDS DAM COMMISSION.**

Subdivision 1. **Establishment.** (a) The Coon Rapids Dam Commission is established to perform the duties specified in subdivision 2.

(b) The commission consists of 15 voting members and three nonvoting members as follows:

(1) two members of the house of representatives, appointed by the speaker of the house, with one member from the minority caucus;

(2) two members of the senate appointed by the Subcommittee on Committees of the Committee on Rules and Administration, with one member from the minority caucus;

(3) the commissioner of natural resources or the commissioner's designee;

(4) the commissioner of energy or the commissioner's designee;

(5) two representatives of Three Rivers Park District, appointed by the Three Rivers Park District Board of Commissioners;

(6) one representative each from the counties of Anoka and Hennepin, appointed by the respective county boards;

(7) one representative each from the cities of Anoka, Brooklyn Park, Champlin, and Coon Rapids, appointed by the respective mayors;

(8) one representative from the Metropolitan Council, appointed by the council chair;

(9) one representative of the Mississippi National River and Recreation Area, appointed by the superintendent of the Mississippi National River and Recreation Area, who shall serve as a nonvoting member;

(10) one representative of the United States Army Corps of Engineers, appointed by the commander of the St. Paul District, United States Army Corps of Engineers, who shall serve as a nonvoting member; and

(11) one representative from the United States Fish and Wildlife Service, appointed by the regional director of the United States Fish and Wildlife Service, who shall serve as a nonvoting member.

(c) The commission shall elect a chair from among its members.

(d) Members of the commission shall serve a term of one year and may be reappointed for any successive number of terms.

(e) The Three Rivers Park District shall provide the commission with office space and staff and administrative services.

(f) Commission members shall serve without compensation.

Subd. 2. **Duties.** The commission shall study options and make recommendations for the future of the Coon Rapids Dam, including its suitable public uses, governance, operation, and maintenance and financing of the dam and its operations. The commission shall consider economic, environmental, ecological, and other pertinent factors. The commission shall, by March 1, 2011, develop and present to the legislature and the governor an analysis and recommendations for the Coon Rapids Dam. The commission

shall present its findings to the house of representatives and senate committees and divisions having jurisdiction over natural resources and energy policy.

Subd. 3. **Expiration.** This section expires upon presentation of the commission's analysis and recommendations according to subdivision 2.

EFFECTIVE DATE. This section is effective the day following final enactment.

Appendix B - DNR letter to Three Rivers Park in Feb. 2010

Minnesota Department of Natural Resources
500 Lafayette Road • St. Paul, MN • 55155-40

February 12, 2010

Cris Gears, Superintendent
Three Rivers Park District
3000 Xenium Lane North
Plymouth, MN 55441

Subject: Importance of the Coon Rapids dam as barrier to the spread of Asian Carp

Dear Mr. Gears,

After our meeting January 6, 2010 and in response to your request for a department position Ecological Resources and Fisheries staff have reviewed this issue and provided the following information.

Preventing the spread of invasive species is a major concern for the Department of Natural Resources (DNR). Asian carp are of particular concern to Minnesota, because they are naturally moving up the Mississippi River. Several Asian carp were caught last year in Pool 5 near Winona.

Limiting the migration of Asian carp into the lower reaches of the Mississippi River in Minnesota is inherently difficult, due to the size of the river and the upstream spread of the fish. Nevertheless, there is an opportunity to prevent Asian carp from invading the upper portions of the Mississippi River. St. Anthony Falls, on the Mississippi River in Minneapolis, was an effective, natural fish barrier for about 10,000 years. Historically, there were 123 fish species known to be present below the falls, but only 64 species upstream of it. In the early 1960s, a lock system was constructed at St. Anthony Falls to allow upstream navigation, thereby eliminating the fish barrier.

The Coon Rapids Dam now acts as a de-facto barrier to upstream migration of fish that were formerly blocked by St. Anthony Falls. Although the DNR is generally in favor of removing dams for multiple reasons, maintaining the Coon Rapids Dam provides a unique opportunity to prevent the spread of Asian carp and other invasive species to the upper Mississippi River system and maintain the unique differences in the natural fish communities that formerly existed above and below St. Anthony Falls.

As a result, the DNR believes it is important to maintain the integrity of the Coon Rapids Dam as a fish barrier and is committed to helping Three Rivers Park District accomplish that.

Please feel free to contact me if you have questions or would like more information.

Sincerely,
DNR Waters

Kent Lokkesmoe
Director

c: Dirk Peterson, Regional Fisheries Supervisor
Steve Hirsch, Director, Ecological Resources
Jason Boyle, State Dam Safety Engineer

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Appendix C - Executive Summary and Recommendations section of Stanley Report

Executive Summary

The primary goal of this preliminary design effort was to identify the improvement measures required to meet the Minnesota Department of Natural Resources' objectives for the Coon Rapids Dam which primarily consists of preventing the migration of invasive fish species for decades to come.

The most practical and economic method to impede the upstream migration of invasive fish was determined to be a physical barrier that utilizes the natural fall and velocity of water over the existing spillway. The existing Dam and existing upstream pool level operating procedure would serve as an effective barrier approximately 89.1 percent of the time[1]. An improved dam structure coupled with a modified upstream pool level operating procedure that maintains the summer recreational pool year-round would serve as an effective barrier approximately 99.9 percent of the time. Preliminary design of improvements necessary to provide an improved invasive fish barrier and to prolong the overall life of the Dam was completed. Major improvements include replacement of the main spillway inflatable gate system and implementation of downstream scour protection measures. The estimated capital cost for improvements totals $16.9 million (2011).

It is recommended that the proposed dam improvements and modified pool operating procedure be considered by State and Federal agencies as part of an overall plan for control of invasive fish species migration into the waters of the State of Minnesota including the Upper Mississippi River Watershed.

[1] Statistical percent of time based on 79 years of historic river flow data, excluding effects of periodic ice jams.

Section 1

Conclusions and Recommendations

1.1 Conclusions

The primary goal of this preliminary design effort was to identify the improvement measures required to meet long term (50-year) objectives for the Coon Rapids Dam. These objectives include:

- Prevention of upstream migration of invasive fish,
- Protecting the Dam against downstream scour,
- Providing long-term solution to main spillway gate system,
- Maintain existing spillway capacity,
- Maintain key recreational features,
- Maintain pool levels such that shoreline properties are not adversely impacted, and
- Maintain feasibility for future hydropower development.

The most practical and economic method to impede upstream migration of invasive fish was determined to be a physical barrier that utilizes the natural fall and velocity of water over the spillway to prevent migration. A modified dam and modified operating procedure would be a significant contribution to impeding passage of invasive fish passage. However it should be noted that fish passage may still be possible under very high river flow conditions and abnormally high tailwater conditions resulting from downstream ice jams.

Preliminary design of improvements necessary to provide an improved invasive fish barrier and to prolong the overall life of the Dam was completed. Improvements that were identified contribute to achievement of the long term objectives of the Dam with the exception of the maintenance of upstream pool levels. The invasive fish barrier analysis concluded that modifying the existing pool operation (i.e. maintaining the summer recreation pool year-round) greatly

improves the barrier effectiveness of the Dam. Continued development of the modified pool operation scenario was therefore deemed prudent and its associated results are presented here.

The preliminary design served as the basis for development of initial capital costs to construct dam improvements. In addition annual operation, maintenance, and equipment replacements costs were developed for the subsequent 50-year period. Annual costs are presented in Section 5. Capital costs and other comparative results are presented in Table 1-1 below.

Table 1-1 Comparative Results

		Barrier Effectiveness[1]		Dam Improvements	
Gate System	Winter Pool Level	#Days[2]	Barrier Effectiveness[3]	Expected Dam Life (years)	Capital Cost[4] (million)
Existing	Drawdown	3,153	89.1	3±	$0
	830.1	211	99.2	5±	$0
New	Drawdown	3,127	89.2	50±	$16.6
	830.1	36	99.9	50±	$16.9
	829.1	78	99.7	50±	$16.9
	828.1	211	99.3	50±	$16.9
	827.1	629	97.8	50±	$16.9

[1] Excludes periodic tailwater ice jam effects.
[2] Indicates number of days the dam would have been passable in 79-year period of record.
[3] Indicates percent of days the dam would have been impassable in 79-year period of record.
[4] Cost base is year 2011.

1.2 Recommendations

It is recommended that the proposed Dam improvements and modified pool operating procedure be considered by State and Federal agencies as part of an overall plan for control of invasive fish species migration into the waters of the State of Minnesota including the Upper Mississippi River Watershed.

Appendix D

National Park Service (NPS) Questions and Department of Natural Resources Responses on Stanley Report

January 19, 2011

NPS question:
1. Is the next report from Stanley the final or a draft? I ask because I was hoping we would see a draft to which we could submit comments. Here are some of issues we would like Stanley to address:

> Stanley's representative stated that only by keeping the Coon Rapids Dam (CRD) pool at the summer elevation year-round would increase its effectiveness as an Asian carp barrier from 89% to 99%. These percentages are based on the number of days on which Asian carp could have surmounted the CRD in the last 70 some years.
>
> I think it is important to note that the numbers represent frequency and not probability. This may sound like semantics, but it matters. If it was only probability, we could believe that the strategy was nearly fool proof. But, if I understand the calculation, at 90% effectiveness, Asian carp could still get by the dam 10% of any given year or about 36 days. We know that only one day is needed, and it only takes a few to get by. Looking at it this way helps me understand why the DNR said, "A conservative assumption is that the dam could be passable as frequently as every year during high water periods." I think Stanley needs to explain its numbers more clearly.

DNR response
The calculation of percent effectiveness presented by Stanley considered the number of days for each scenario (dam configuration and operation) where the dam was passable in the 79 year period of record. If averaged out over the period or record, John is correct that the dam could be passable 36 days out of a given year under the current configuration and operating plan. With the proposed new gate system and a switch to constant operation at the summer pool elevation the effectiveness jumps significantly to 99.9% of days over the period of record. There have been 6 events with a mean duration of 6 days where the dam would have been passable.

A more common way to analyze recurrence interval is to look at peak annual streamflow over the period of record, and look at the probability of a given flow. Under the current dam configuration and operation the dam is passable at flows of 40,000 cfs or greater, or a recurrence interval of once every 3 to 4 years. With proposed modifications to the dam and operating procedure the dam is a barrier up to 60,000 cfs, a flow that reoccurs once every 15-20 years.

These data indicate that while the modifications to the dam its function as a barrier, there is still potential for Asian carp to bypass the dam. One should keep in mind that the analysis of fish

passage includes several conservative assumptions, meaning that when uncertainties in the analysis were encountered it was assumed that Asian carp would maximize their ability to pass the dam. Examples include questions about whether Asian carp behaviorally will use their leaping ability to pass obstructions (rather than their typical use of leaping as a predator-escape response) and no inclusion of a loss of leaping ability from water mixed with air bubbles. It is possible that the dam may perform better than the analysis indicates.

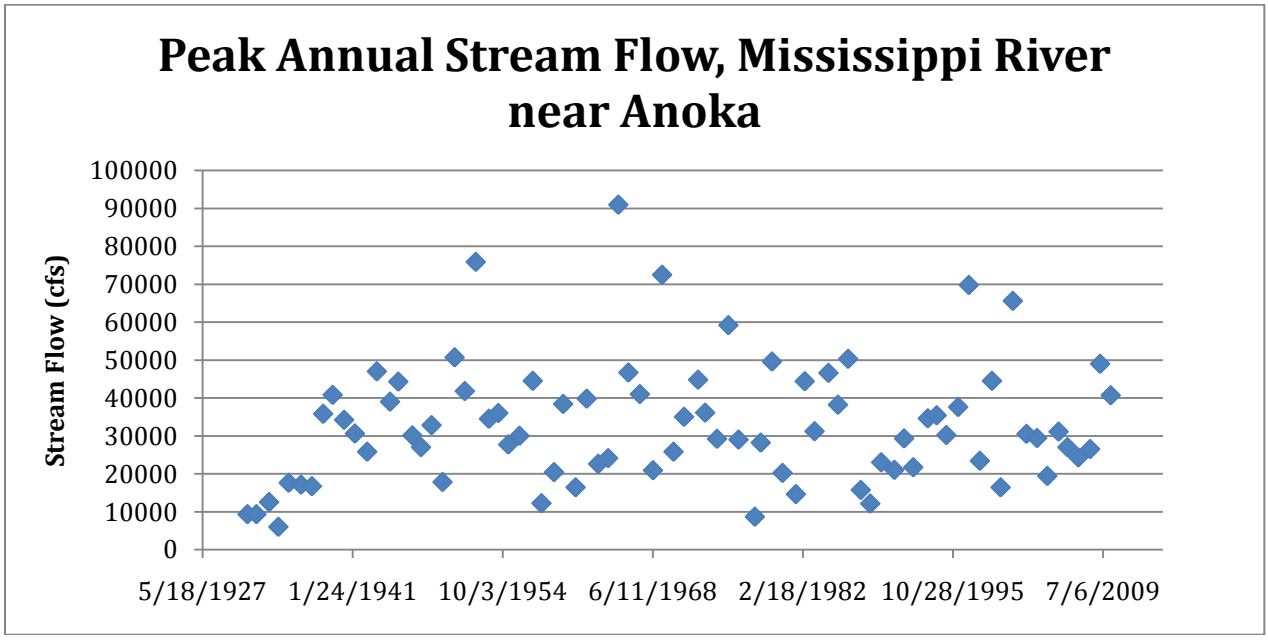
NPS question:

How Stanley figured their percentages also needs clarification. They based the numbers on flow levels and head differentials compared to Asian carp swimming and leaping abilities. They may have looked at what other scientists are doing on this issue, but that is not how it was presented. How reliable are their calculations compared to what other scientists are doing? Also, as noted, they looked at the last 70 some years. Do the numbers change if you look at the last 20 or the last 10? Have we had more frequent high water events in the last 10 to 20 years? With the effects of Global Climate Change, could we expect more high water events than historically?

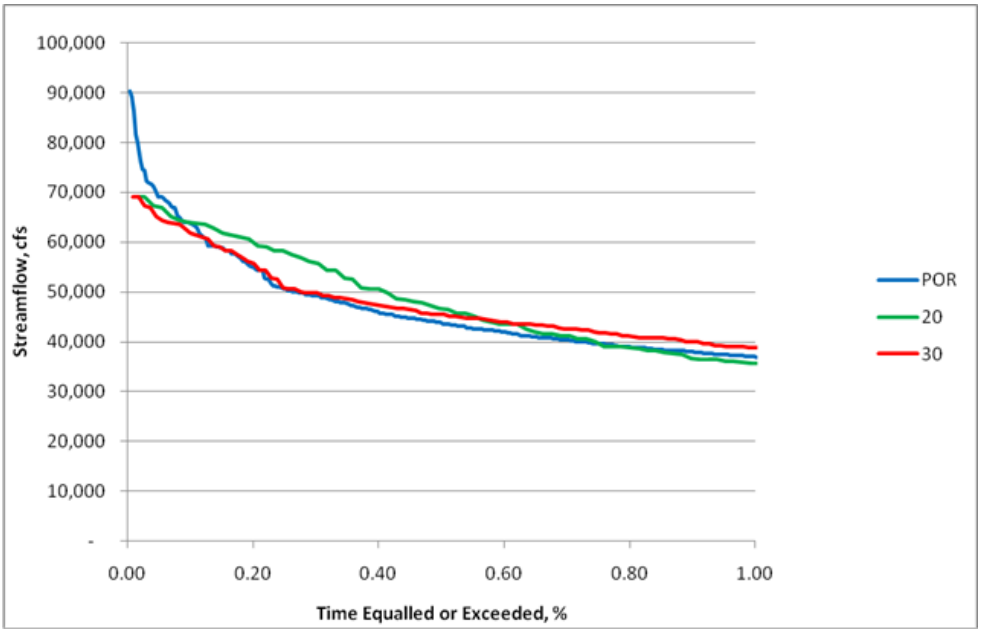
DNR response

The analysis technique used by Stanley is typical of the approach used to assess fish passage at dams and natural obstructions. It follows methodology outlined in Powers and Osborn (1985) where the physical conditions of the obstruction (water velocity and vertical fall) and swimming and leaping abilities of the fish are quantified. An iterative process assessing optimal fish swimming and leaping behavior is used to evaluate whether the fish passage is possible.

Looking at peak stream flows for the last 20 years as compared to the full period of record, there is no noticeable change. Climate change may have the potential to increase peak streamflow in the future, based on modeled future effects.



An analysis of flow duration curves for different time periods does show a trend toward an increase in flows between 50,000 and 60,000 cfs.



NPS question:

I asked about the effect of ice dams below CRD and how they back the tailwater up toward the dam. By doing so, the head differential between the tailwater and the pool level is reduced, possibly increasing the opportunity for Asian carp to get above the dam. I understand that Stanley is going to address this issue in their draft report. We need to know if this changes the numbers.

DNR response

Ice dams in the Mississippi River downstream of the Coon Rapids Dam periodically back up water, thereby raising the tailwater elevation below the dam. I am aware of two events that have occurred in the past 5 years where tailwater elevation has been near the current dam crest elevation, but there is no record of the recurrence or magnitude of these events similar to what we have for flood flows. Therefore a similar analysis of recurrence probability is not possible. A new gate system and operating plan may help to at least partially reduce the possibility of passage during such events, but Stanley has also indicated that to prevent damage to the new gate system the gates would have to be kept down during such an event.

This scenario is unclear as to its effect on the function of the dam as a barrier and may not fully quantifiable, but it is a cause for concern in relying on this dam to prevent the spread of Asian carp.

NPS question:

2. On page 3 of 6, the notes state that:

> Brian Nerbonne advised that there are other dams north of the Coon Rapids Dam that have not been studied but confirmed that the Coon Rapids Dam would most likely be more effective than those found north on the Mississippi River.

I don't believe this is what Brian said. The St. Cloud Dam and other dams to the north are higher than the Coon Rapids Dam and, therefore, better barriers. Granted, we do not want to see Asian carp that far north.

DNR response:

This may refer to the Anoka Dam on the Rum River, which I have been told is less of a barrier than the Coon Rapids Dam. Although a quantified analysis has not been done, the dam at St. Cloud has a greater head than Coon Rapids and may be a better fish barrier. Other dams exist further upstream on the Mississippi as well.

Dale Homuth, DNR provided the following comments:

- *St. Cloud Dam: Based in the new flood study for Stearns County, the St. Cloud Dam has a head difference varying from 14' in the 10 year flood to 12' in the 100 year flood. However, based on first hand observation of the dam during floods, this difference occurs over several hundred feet, and I would question the effectiveness of this dam as a barrier. A velocity vs head difference study, similar to what Stanley did at Coon Rapids would be needed to assess the effectiveness of this dam as a barrier.*
- *Rum River Dam at Anoka: An old 1973 flood study (nothing newer is yet available) indicates a 100 year headwater elevation of 848', and a tailwater of 844.5'. The sill of the dam at the tainter gate on the east side of the dam is at 835'. Even if the flashboards are left up and the tainter gate closed, the top of the dam is 844', which is still below the estimated 100 year tailwater level. In addition, a new flood study on the Mississippi River in Hennepin County estimates the 100 year flood level at the mouth of the Rum River at about 844', which is consistent with the 1973 study results. Therefore, it is obvious that the Anoka Dam would be no barrier at all to Asian carp heading for Mille Lacs Lake, and probably not even for most native fish species. There are no other dams on the Rum with more head difference than the Anoka Dam. Only the Buckmore Dam at Lake Ogechie is considered an obstacle to native fish, but it would not be a barrier to Asian carp and it is slated for removal in the near future.*

Appendix E - Army Corps of Engineers letter

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
180 FIFTH STREET EAST, SUITE 700
ST. PAUL MN 55101-1678

13 August 2010

REPLY TO
ATTENTION OF

Regional Planning and Environment Division North
Plan Formulation & Economics Branch

Mr. Cris Gears
Superintendent
Three Rivers Park District
Administrative Center
3000 Xenium Lane North
Plymouth, Minnesota 55441-1299

Dear Mr. Gears:

I am writing to advise you that Mr. Craig Evans will be the Corps of Engineers liaison to the Coon Rapids Dam Commission. Because Federal law and regulation place a number of limitations on the manner in which Federal employees may participate with non-Federal entities, I would like to take this opportunity to outline some of the parameters that are placed on Mr. Evans' participation with the commission.

Under the Department of Defense Joint Ethics Regulation, Department of Defense employees may serve as liaisons to non-Federal entities when there is a significant and continuing Department of Defense interest to be served by such representation. Liaisons serve as part of their official duties. As such, Mr. Evans' participation will be funded by the Corps. However, the Corps retains the full discretion to determine the extent and duration of his participation.

Mr. Evans is prohibited from participating with the commission in a manner that raises conflict of interest concerns with his official position with the Corps. Because he will be participating as a Corps employee, he cannot undertake an independent fiduciary responsibility to the commission or the State. His participation with the commission must be limited to serving as a liaison between the Corps and the commission, representing the interests of the Corps. Further, although he is officially representing the Corps in discussions of matters of mutual interest with the commission, any opinions he expresses do not bind the Corps to any action. Finally, he may not be involved in matters of management or control of the commission nor may he provide support to the commission beyond his participation as a liaison.

If these limitations are acceptable, we look forward to the opportunity to work with the Coon Rapids Dam Commission. If you have any questions regarding the above, you may contact me at the above address or by phone at (651) 290-5284, or you may contact our District

Counsel, Joseph Willging, by phone at (651) 290-5500. You may reach Mr. Evans at the address above, by e-mail at craig.o.evans@usace.army.mil, or by phone at (651) 290-5594.

Sincerely,

Thomas L. Crump
Chief, Regional Planning and
Environment Division North

Appendix F

Additional comments from Commission members

These letters were submitted by commission members for inclusion in the report without review or comment by the Coon Rapids Regional Dam Commission.

IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Mississippi National River and Recreation Area
111 E. Kellogg Blvd., Ste. 105
St. Paul, Minnesota 55101-1256

February 24, 2011

Larry Blackstad, Tri-Chair
Commissioner
Three Rivers Park District

Jerry Newton, Tri-Chair
Former Representative
MN House of Representatives

Mark Uglem, Tri-Chair
Mayor
City of Champlin

Dear Tri-Chairs,

The Mississippi National River and Recreation Area, National Park Service, cannot endorse the Coon Rapids Dam Commission Report or some of its recommendations. This letter explains why. We do want to commend Charlie Petersen, who facilitated the meetings and wrote the Report.

Like the Coon Rapids Dam Commission (Commission) and the Minnesota Department of Natural Resources (DNR), the Mississippi National River and Recreation Area is concerned about the spread of Asian carp and other invasive species. In particular, we are concerned for the 72-mile reach of the Mississippi River from the bottom of Dakota County to the top of Hennepin County. This is the reach or corridor that Congress charged the National Park Service (NPS) with protecting, preserving and enhancing. We do not want to see Asian carp anywhere in the corridor and would like to stop them as far down stream as possible.

If the State relies on the Coon Rapids Dam as the first and best place to stop Asian carp and ignores the river below, we believe the Mississippi River through the whole corridor could suffer. We are not convinced that the Coon Rapids Dam is an effective barrier and that refurbishing the dam will only delay, not prevent, the spread of Asian carp.

As a participant on the Commission, our name is on the report, and we feel obligated to state our misgivings with the process and the Commission's recommendations. From the outset of the Commission process, our goal has been to make the best decision possible for the resources of the Mississippi National River and Recreation Area based on the best information. We did not take a position on the dam's future, including on whether it should be repaired or removed. We understand

that both alternatives have many consequences and believe that only with clear and substantive information can we make an informed decision. The Commission has not provided clarity or substance we need.

The Commission's Purpose

We believe the Commission's purpose expanded past its original intention, which led to some of the reasons we cannot endorse its report. When established, the Commission had a specific mission, and its locally-focused membership was selected to fit that mission. That mission stemmed from the Three Rivers Park District's (Park District) decision to divest itself of the dam. To its credit, the Park District wanted local interests to have a chance to weigh all the issues tied to the Park District's decision.

In February 2010, the DNR sent a letter to the Park District stating that the Coon Rapids Dam presented an opportunity to stop the spread of Asian carp, and the DNR subsequently arranged for a contract with Stanley Consultants Inc. to study the dam as a potential Asian carp barrier. This changed the Commission's focus in at least one crucial way. Rather than speaking specifically for the interests affected by the Park District's decision, the Commission began speaking for the region and State concerning the advance of Asian carp. Had representatives from other parts of the state joined this discussion, we believe the recommendations and report would have been different. The Asian carp concern provided a potentially strong and reasonable argument to have the State pay for the needed dam repairs and, not surprisingly, became a primary focus of the meetings and recommendations.

Recommendations

The Commission relies primarily on the fear of Asian carp to support its first three recommendations. Below, we explain our concerns with the Asian carp issue in each recommendation.

<u>Recommendation 1</u>

The primary justification for spending $16.9 million on the Coon Rapids Dam is that it is the first and best place to stop Asian carp from expanding up the Mississippi River. The Stanley Report argues that refurbishing the dam and maintaining the summer pool level year-round will increase the dam's effectiveness from 89.1% to 99.9%. The latter number seems to guarantee the dam will work as a barrier and the cost is well worth it. We have some reservations.

The word "effective" is subjective. Two primary conditions define how effective the Coon Rapids Dam will be in stopping or delaying the Asian carp invasion: The occurrence of floods greater than 60,000 cubic feet per second (cfs) and the fact that ice jams downstream can cause the river to back up and rise to near the level of the reservoir or pool above the dam.

Statistics are tricky. Over the last 79 years, Asian carp could have passed the dam during six high water events. So on average, the carp could get by the dam every 13.2 years. (The DNR says every 15 to 20 years.) But all six events have occurred since 1951; so using the last 58 years, the average falls to 9.7. Regardless of the averages, the event that allows the carp to pass could happen the year following the dam's refurbishment or any year afterward but almost certainly within about 10 to 15 years. However, according to the DNR, *"An analysis of flow duration curves for different time periods does show a trend*

toward an increase in flows between 50,000 and 60,000 cfs." In other words, high water events appear to be increasing. This suggests that Asian carp would have more frequent opportunities to surmount the dam.

Ice jams could represent the weakest link. According to dam operators, ice jams raise the downstream river level to near that of the river above the dam about every five years. The Stanley report provided photos from 2005 and 2010 as examples, and another image from 2011 was distributed at the last Commission meeting. In such years, the height difference between the river on either side of the dam has been minimal to almost level. It appears that, given their tremendous swimming and jumping abilities, Asian carp would have little difficulty getting above the dam under these conditions. For these reasons, the DNR concluded that the backups are "a cause for concern in relying on this dam to prevent the spread of Asian carp."

What about the new gates and operating plan? Replying to an NPS question on the ice jam issue, the DNR stated: "A new gate system and operating plan may help to at least partially reduce the possibility of passage during such events, but Stanley has indicated that to prevent damage to the new gate system the gates would have to be kept down during such events." In their report, Stanley called out the ice jam condition as a time when Asian carp could get by the dam and consistently noted that their measure of effectiveness excluded ice jam conditions.

Recommendation 1 suggests that the Coon Rapids Dam represents the first and easiest opportunity to stop Asian carp, but no one has looked into the matter seriously. If Asian carp arrive in the Twin Cities area, Lock and Dam No. 1 and Upper St. Anthony Falls Lock and Dam represent the first and best barriers to stop their spread upriver. Dam No. 1 has a 36-foot drop and Upper St. Anthony Falls has 49-foot drop. Both present complete barriers to Asian carp migration, if the locks were closed. If carp get past Lock and Dam No. 1, they would still have to get by Upper St. Anthony Falls Lock and Dam. St. Anthony Falls served as an effective barrier against fish migration for millennia, as demonstrated by the great difference between species above and below it.

The U.S. Army Corps of Engineers, however, is authorized to provide for navigation, not implement a carp barrier. We have to ask if there is an opportunity for Congress to authorize the Corps of Engineers to close the locks in the Twin Cities as an emergency measure, if Asian carp show up. We are not suggesting an authorization to close the locks immediately. But an authorization to do so should Asian carp show up below the dam avoid a lawsuit like that now being fought over the Chicago Sanitary and Ship Canal. Minnesota joined that lawsuit to protect Lake Superior's fishery. Would it not file suit to close a lock here to protect the upper Mississippi's fishery in Minnesota? The option of closing the lock may not need to be implemented. If the carp do not show up for many years, researchers may develop solutions preventing their expansion that would not require closing the lock. But, if the carp do show up, having such an authorization in place could save the Mississippi River above Lock and Dam No. 1 all the way to the Headwaters.

We recognize and are very concerned that closing the locks would have a significant impact on navigation, both commercial and recreational, but as Recommendation 3 emphasizes, the economic costs to the State would be in the billions of dollars if the carp get past the Coon Rapids Dam. The public and interests affected by potentially closing the locks would have to be consulted. Granted, more study is needed for this and the other options, but, we believe, more study is needed of the Coon Rapids Dam from many aspects.

Recommendation 2

This recommendation urges that the project be authorized quickly and the project carried out quickly, in part, because Asian carp are rapidly approaching. The report offers no substantive or scientific documentation supporting when Asian carp might arrive. So, what is the most scientific or authoritative estimate of when Asian carp could arrive and what is the reasoning? Without this information, how can the Commission use the Asian carp issue to justify the urgency expressed in their recommendation?

Recommendation 3

Recommendation 3 stresses the need for spending $16.9 million on the Coon Rapids Dam as an Asian carp barrier because it will save a multi-billion industry. We have two concerns with this assertion. First, as we have discussed above, the dam may slow the advance of Asian carp, but there is no proof it will not stop them. The river above the dam may get a short reprieve or none at all, depending on river conditions in any given year. Second, if so much is at stake, is the State willing to let the carp get to the Coon Rapids Dam, when it could almost certainly stop them further downstream? We understand that the Commission was not formed to address Asian carp, but by its assumptions and use of the issue, the Commission has asserted such a role.

Justifications without the Asian Carp Barrier

The Commission' report identifies a number of Interest Areas the Commission selected to examine. We have addressed Asian carp. Three others are prefaced by: "Maintain the pool created by the dam." These are recreational use, economic value and development, and ecological well-being. In each case the presumption is that losing the pool will result in the loss or decline of the resource. Yet, the Commission did not examine any of these interest areas substantively or scientifically. It relied on the opinions of various Commission members. The NPS and two other federal agencies urged the Commission to compare the existing conditions to what conditions might be without the dam, but the Commission rejected doing so. As a result, all the statements concerning the impacts of not refurbishing the dam are speculative and have been developed by those interests whose primary objective is to save the dam and reservoir.

For example, one fear is that property values will fall sharply without the reservoir. We suggested that the Commission look at examples from other rivers where dams have been removed to see what happened to property values. The Commission chose not to. Another fear is that the recreational value of a free flowing river will be less than for the reservoir. We suggested that the recreational value might be different but just as great and that the Commission should look into the issue. The Commission declined. There is little question that the ecological values of the river above the dam would improve if restored to a rapids. Recent surveys by the DNR showed more than 30 species of fish above the reservoir and below the dam but only six in the reservoir. The Mississippi River above St. Anthony Falls and up past Anoka is impaired for fecal coli form bacteria. Historical records show that the Coon Rapids could greatly reduce the bacteria levels.

The DNR has raised the issue that the dam is an effective barrier to native fish species historically not found above St. Anthony Falls but which have reached the dam, due to the lock now at St. Anthony. This is a valid concern, but we have seen no substantive examination of the issues for the various species involved.

Much more work could be done to compare the pros and cons of refurbishing the Coon Rapids Dam, which would enable everyone to make the best decision possible. So for the reasons detailed above, we cannot endorse the report or the first three recommendations. We have no comment on Recommendations 4 and 5.

If you have any questions about these comments, please contact me at paul_labovitz@nps.gov or at 651-290-3030, extension 222.

Sincerely,

Paul Labovitz
Superintendent

cc: Members, Coon Rapids Dam Commission
Mr. Charlie Petersen, Facilitator, Coon Rapids Dam Commission

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 American Blvd E.
Bloomington, Minnesota 55425-1665

February 25, 2011

Charles Petersen
Management Consultant Senior
Management Analysis & Development
Minnesota Management & Budget
50 Sherburne Ave.
Saint Paul, Minnesota 55155

Re: Coon Rapids Regional Dam Commission
FWS TAILS #32410-2010-CPA-0194

Dear Mr. Petersen:

Regional Director Tom Melius, U.S. Fish and Wildlife Service (Service), received a request for a representative of the Service to be a member of the Coon Rapids Dam Commission on June 15, 2010. Fish and Wildlife Biologist Rich Davis in my office was assigned the task of attending Commission meetings and providing technical assistance and input to the other Commission members. Mr. Davis has also assisted in providing review and comment on various draft versions of the Commission's report to be submitted to the Legislature. The Service has reviewed the Final Draft Report of the Commission (version 2/24/11), and provides the following comments:

- Based on our review of the proposed project area, and data available at the time of this review, the proposed project is not anticipated to have a negative effect on any federally-listed threatened or endangered species.

- The proposed project does not appear to negatively impact bald eagles, and therefore would not likely require an eagle take permit pursuant to the Bald and Golden Eagle Protection Act. Eagle nest and use information should be updated prior to any construction.

- With regard to the refurbishment of the Coon Rapids Dam as an invasive species barrier, the Commission acknowledges the limitation of the structures effectiveness as a barrier during greater then 60,000 cubic feet per second flows and during downstream ice dam events.

- In order to potentially increase the effectiveness of the Dam as an invasive species barrier, we recommend that coordination with State and Federal agencies be maintained

as to the incorporation of the Coon Rapids Dam into a invasive species barrier system within the Mississippi River system.

- The Coon Rapids Regional Dam Commission Final Draft Report, page 9, header "Maintain the pool created by the dam – from an ecological perspective," implies that the existing recreational pool provides ecologically significant aquatic habitat. In the view of the FWS, a free flowing river system provides superior ecological benefits when compared to an impounded riverine system.

The Service appreciates the opportunity to be involved as a non-voting member of the Coon Rapids Regional Dam Commission. Our role and involvement as part of this Commission is offered in the spirit of technical assistance, and we were pleased to offer our input on matters within our expertise. Because of our non-voting status, the Commission's final recommendations and goals should not be viewed as a reflection of any final opinion of the Service with regard to the refurbishment of the Coon Rapids Dam, or the structure's effectiveness as an invasive species barrier.

Please contact Rich Davis at (612) 725-3548, ext. 2214, or Deputy Field Supervisor Pete Fasbender at (612) 725-3548, ext. 2207, if we can be of further assistance.

Sincerely,

Tony Sullins
Field Supervisor

ThreeRivers
PARK DISTRICT

Three Rivers Park District Board of Commissioners

Sara Wyatt
District 1

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District 4

Rosemary Franzese
District 5

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Appointed

Barbara Kinsey
Appointed

Cris Gears
Superintendent

February 25, 2011

Coon Rapids Dam Commission
c/o Charlie Petersen
Minnesota Management & Budget
50 Sherburne Ave.
Saint Paul, MN 55155

Dear Coon Rapids Dam Commission:

The Three Rivers Park District (TRPD) Board of Commissioners at its February 17, 2011, regular meeting unanimously adopted a motion to submit the following letter of qualified support and commentary on the final recommendations of the Coon Rapids Dam Commission. The TRPD Board of Commissioners requests that this letter be included within the final report of the Coon Rapids Dam (CRD) Commission.

Background

TRPD has owned and operated the Coon Rapids Dam for more than 40 years. TRPD accepted the dam in 1969 from Northern States Power Company as part of a land purchase in the interest of acquiring parkland along the Mississippi River.

Over time, it has become clear to the TRPD Board of Commissioners that maintenance, upkeep and operation of a major dam on a federal waterway is outside the central mission of TRPD and not a cost that should be borne by TRPD taxpayers. Several times in the last 15 years TRPD has appealed to the State of Minnesota to help identify a more appropriate owner/operator for the dam. TRPD believes that if the dam is determined to be of regional and/or statewide significance, a new owner/operator should be identified. Previously, those appeals were met with state funding support for short-term fixes, but no long-term answers regarding ownership.

In late 2009, further significant repair needs were identified for the CRD. The TRPD Board of Commissioners addressed this issue by reiterating that the CRD no longer fits the mission of TRPD, and that TRPD would no longer invest significant financial resources for long-term capital improvements. However, recognizing that other parties may have an interest in preserving the CRD, TRPD worked with the 2010 Minnesota State Legislature to create the Coon Rapids Dam Commission. The Commission was charged with assessing interest in preserving the CRD, its potential long-term benefits to the state, funding streams and appropriate new governance.

Three Rivers Park District supports four of five recommendations

In the process of assessing the future of the CRD, the Commission received information from a Minnesota Department of Natural Resources (DNR) study that a reconstructed dam could serve as a critical barrier to the spread of invasive fish species, primarily Asian Carp, upstream and into some of Minnesota's most treasured sport fisheries. The Commission is now making five recommendations to the Minnesota Legislature based on the DNR's findings. The TRPD Board of Commissioners is in substantial agreement with recommend-ations 1, 2, 3 and 5. **<u>However, the TRPD Board of Commissioners strongly disagrees with recommendation number 4.</u>**

Administrative Center, 3000 Xenium Lane North, Plymouth, MN 55441-1299

The recommendations

1. **Complete a major refurbishment of the Coon Rapids Dam for a fifty-year or greater life span.** The Stanley Consultants Report on the dam as a fish barrier provides the blueprint for this work. The report identifies several actions needed to make the dam a more effective invasive fish barrier including:

    a. Replace spillway gate system;
    b. Mitigate downstream scour; and
    c. Maintain recreational pool at summer level year-round.

    - ***Three Rivers Park District endorses the DNR's findings that the CRD can serve critical state interests by acting as a barrier to the spread of invasive fish species, and TRPD supports the proposed refurbishment of the CRD for that function. TRPD has no position on the building of a coffer dam to maintain the recreational pool level during construction.***

2. **Begin the work on the dam refurbishment as soon as possible.** The dam is almost one hundred years old. Two scour holes have been found and one repaired in the last 10 years. The current problematic gate system is 14 years old and will soon be out of warranty.

    Additionally, in the upper Midwestern United States, Asian carp have been spreading up the Mississippi River. … The Stanley Report states a three-year time frame from design until completion; making the project, even if started this year, not completed until the end of 2013.

    Due to repair work needed on the scour hole and gates on the dam, plus the concern regarding Asian carp, the refurbishment of the dam takes on a sense of urgency.

    - ***TRPD agrees that work to reconstruct the CRD as a barrier to the spread of invasive fish species should begin as soon as possible.***

3. **Use state funds to complete the refurbishment work.** Limiting the migration of invasive fish species is a statewide issue impacting the $4 billion plus statewide annual fishing, water recreation, and tourism industries. A one-time capital investment of $17 million to help protect these industries is recommended. Funding options include use of bonding funds, Legacy funds, and other state funds.

    - ***TRPD agrees that the reconstruction and continued operation of the CRD is a statewide issue and that state funds should pay for repairs to make the dam a barrier to the spread of invasive fish species.***

4. **Keep the Coon Rapids Regional Dam Commission authorized in Chapter 361, Minnesota Session Laws, 2010 Regular Session in existence for up to 12 months to study and address the issues of governance, ownership, and operation of the dam.** The continued discussion on ownership, governance, and operations should not delay the refurbishment work on the dam. The Legislature, DNR and all affected local units of government should continue working together to facilitate such actions as the Invasive Species Barrier Study conducted by Stanley Consulting and the work of this Commission.

- ***Three Rivers Park District disagrees with recommendation 4 for the following reasons:***

- *The Minnesota Department of Natural Resources has determined that the CRD can be an effective barrier to the spread of invasive fish species, offering protection for the state's multi-billion dollar fishing and tourism industries. TRPD believes the DNR findings clearly demonstrate that the CRD serves critical statewide interests and, thus, establishes the State of Minnesota as the only logical owner of the dam. Further "study" on the issue of appropriate ownership is unnecessary.*

- *A transfer of ownership will not delay construction. On the contrary, the change in ownership to the State will signify the dam's importance as a critical part of the State's invasive species management plan. TRPD is committed to a seamless and expedited transfer of ownership of the CRD to the State of Minnesota.*

- *The State of Minnesota, via the DNR, is the official fisheries "expert." TRPD has no knowledge or expertise on state fisheries issues or effective barriers to the spread of invasive species.*

- *There is no local government entity (county, city or parks) capable of managing statewide environmental and economic issues of this magnitude.*

- *Over the past forty years, no agencies other than TRPD and the State of Minnesota have expressed any willingness to contribute funding to support the dam. Therefore, the funding, ownership and governance of the dam are issues that should be discussed between the State of Minnesota and TRPD.*

5. Refurbishment of dam should be done in such a manner as to not impede any future installation of hydroelectric power.

- ***TRPD agrees that refurbishment should allow for the possibility of hydroelectric generation at the dam***

We thank the Commission for their time and efforts, and for including this statement of our qualified support and comments with their final report. We look forward to discussions with Legislators to provide our support for the use of the Coon Rapids Dam as an invasive fish barrier, and to resolve issues about its appropriate ownership.

Sincerely,

Larry Blackstad, Board Chair
Three Rivers Park District
Board of Commissioners

c: Cris Gears, Superintendent
Associate Superintendents