

GRAND RIVER RESTORATION STAKEHOLDER GROUP

Mike VanGessel and Steve Heacock, Co-chairs

40 Monroe Center NW, Suite 200 | Grand Rapids, MI 49503 | (616) 459-6459 |

FINAL REPORT

River Quality and Use Subcommittee

Report to the Grand River Restoration Stakeholder Group

May, 2013

Fred Keller and Michael Lindley, Co-Chairs

“We will succeed in making our most important natural feature – the Grand River increasingly visible and usable by converting older riverfront industrial sites to parks and new development that welcome people to the river’s edge. We will recreate the rapids in the river as a reminder of our heritage.”

Green Grand Rapids (2012)

INTRODUCTION

Grand Rapids has awakened to the fact that the Grand River is one of its most important natural, economic, and community resources. As Grand Rapids’ most significant natural asset, the Grand River can and should play an increasingly important role in enhancing the city’s quality of life. Grand Rapids Whitewater (GRWW), a nonprofit organization, was formed to focus on one aspect of the *Green Grand Rapids* vision: restoring the City’s namesake rapids.

Last year, GRWW retained a national river restoration engineering firm, RiverRestoration, and a local engineering firm, Fishbeck, Thompson, Carr & Huber, Inc., to collaborate in a preliminary review of the opportunities and constraints associated with rapids restoration, which was completed in August 2012. The opportunities identified include:

- Install water quality and habitat enhancements
- Connect historic sturgeon spawning habitat
- Improve access and recreational opportunities for residents
- Enhance natural aesthetics and riparian function of the riverfront
- Attract tourism, businesses, and employment opportunities
- Create access to natural areas for under-represented community members
- Invigorate the cultural significance of the rapids
- Implement a comprehensive plan for watershed and green infrastructure issues
- Generate a stewardship ethic for the River through education and outreach.

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This preliminary analysis also identified important constraints on any rapids restoration project, including:

- Sea lamprey barrier and control
- Obtaining necessary easements from adjacent landowners
- Flood conveyance
- Project costs

GRWW representatives also began meeting last year with user groups, community leaders, and governmental officials to refine its understanding of the opportunities and constraints and to assess the likelihood of public interest and philanthropic support. For example, in these informal meetings, important issues were identified that are associated with maintaining and enhancing river flows and levels for rowers and property owners upstream and downstream; maintaining and enhancing sport fishing opportunities and access; and enhancing opportunities for river access for disabled individuals and the general public and the associated public safety concerns.

Beginning in June 2012, GRWW determined community outreach was necessary. GRWW asked the Michigan League of Conservation Voters Education Fund to design and implement a short-term, time-limited stakeholder process to reach out to potentially affected interests. MLCV Education Fund convened a series of stakeholder meetings to elaborate on the preliminary opportunities and constraints by identifying additional issues, concerns, opportunities, information, and interested groups. This stakeholder process is depicted in Attachment A. To date, there have been two large-group meetings, including the December 2012 meeting at which three subgroups of stakeholders were identified to focus specifically on (1) river quality and use; (2) economic development; and (3) community benefits. These subgroups met monthly in February, March, and April 2013, with the results of their deliberations to be presented to the full stakeholder group in May 2013. These results also will be forwarded to GRWW and will be publicly available.

GRWW will use the opportunities, issues, concerns, and information from this preliminary stakeholder process in undertaking an initial feasibility analysis of potential designs for restoring the namesake rapids in downtown Grand Rapids and the associated costs and benefits. This analysis will support a determination as to which, if any, project designs warrant moving forward to secure project funding and to prepare and submit detailed applications to the various local, state and federal government agencies involved. The relevant results will be publicly available and subject to public involvement if and as the project moves forward to the permit application phase.

As the figure in Attachment A indicates, it is anticipated (and hoped) that this initial stakeholder process will also identify additional potential projects associated with enhancing the Grand River as a community resource for Grand Rapids. To the extent that restoring the namesake rapids can serve as an inspiration and catalyst for these projects, GRWW is eager to coordinate and collaborate with other nonprofit groups, government agencies, and community leaders interested in pursuing these projects to realize a more comprehensive view of Grand River restoration.

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River Quality and Use Subcommittee Participation:

The Stakeholder Group has subcommittees which act as work groups. Participation in the River Quality and Use Subcommittee was by interest and voluntary. The River Quality and Use Subcommittee met monthly and was open to all interested individuals throughout the process. Please see Attachment B for a complete list of subcommittee participants.

Meeting Frequency and Procedures:

The River Quality and Use Subcommittee convened for the first time in December 2012, then once monthly during February and March with a final review meeting in April 2013. Fred Keller and Mike Lindley co-chaired the subcommittee. The meetings were guided by an agenda, but also provided an opportunity to field questions, address concerns, and report progress and information. Meeting notes are available upon request.

REPORT

This report is presented by the River Quality and Use Subcommittee to the larger Stakeholder Group, and reflects the work done by the subcommittee to identify issues and interest groups potentially related to or affected by river restoration. The subcommittee was charged with providing input on environmental quality and recreational use improvements and concerns associated with downtown river restoration, especially with respect to proposals to reengineer the river channel and hydrology and restore the namesake rapids. Simply put, the subcommittee focused on the “wet” aspects of the river restoration.

Below please find a categorized list of issues and interest groups with a likely interest in these issues.

I. Public Use

Public Access: Which opportunities exist and could be enhanced?

- Water crafts of all types
- Anglers of all types
- For the disabled; currently using east wall and east quarter, and boat launch park (upstream)
- For the community for river-based events to make the River a focal point
- For students; buses bring children to observe fish ladder; students also participate in the “Salmon in Schools” project
- Consider parking, including for boat trailers
- Consider future user groups, including pleasure boaters, canoeists, swimmers, spectators viewing river events

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Public Safety:

- Must preserve public safety vehicle access to the River; currently have six points of access
- Grand Rapids Police Department has no boat for river emergencies
- Avoid creating hazards that prevent the Grand Rapids Fire Department (which has a boat) from getting into the River in an emergency situation
- Currently about 12 incidents per year, most occur at 6th Street Dam
- If swimming is allowed, BEACH Act requires a warning system for water contamination, including *E. coli*
- If spectators will congregate, provide for orderly parking and other crowd control measures
- River-related ordinances may need adjustment; if swimming is contemplated, or boaters portage around a structure, changes may need to be made

II. Models and Information on Water Flow

Water Quality

- Consider possible effects on water quality resulting from reengineering the hydrology and geography of the River
- Consider long term monitoring of water quality and management

Flood Control and Protection:

- Ensure adequacy of upstream and downstream flood protection despite any changes to the River
- Evaluate impact of variable Lake Michigan levels on river levels- velocity of river and impact on fish patterns
 - A participant mentioned that Lake Michigan levels are at an all time low. A check of the US Army Corps of Engineers Detroit District website on April 4, 2013 confirmed that the all-time low level was January 2013 at 576.02 feet. The all-time high level was in October 1986 at 582.35 feet – a difference in water basin height of 6.33 feet.
- Need to plan for when water levels in Lake Michigan increase because water levels are cyclical
- Evaluate how river restoration will affect adequacy of current floodwalls
- Improve flood protection resilience for extreme weather events (e.g. basement of Van Andel arena has flooded from beneath the flood walls when there was extreme ice on the River)
- What happens to ponds in Riverside Park if water level is low?

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Aquatic Species

- Maximize opportunities to enhance desirable and in-peril species
 - Process should aim to strike the best balance for species diversity
 - The Michigan Stream Team white paper is intended to be a resource for those interested in avoiding harm to aquatic ecosystems (link can be found under the List of Attachments and Resources)
- Minimize or eliminate potential for invasive species
- Consider whether any changes in lamprey passage could be compensated for by increasing lampricide treatments upstream

Consider Sediment Flow and Transport

- Need for long term maintenance of any new structures in the River
- Effect on increasing or decreasing stream velocity, which could alter sediment transport
- Sediment-related impact downstream on Kent and Ottawa County
- Sediment-related impact on Lake Michigan

Storm Water

- River currently receives substantial storm water runoff, which can include pollutants
- Need to stay aware of updates and developments in Federal State, and local storm water management regulations

Groundwater

- How will modifications affect river hydrology and nearby groundwater resources?
- Seasonal water flow rates are of special concern to downstream communities; Ottawa County is currently engaged in a comprehensive groundwater study and finds that groundwater is being depleted faster than it can be recharged

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III. Legal, Regulatory, and Liability Issues

Anticipate Possible Liability for Personal Injury

- Who is liable if someone is injured?
- Does a public body like the City of Grand Rapids lose immunity if the natural or existing structure is altered?
- If debris in the River gets stuck in the structure, who is responsible for removing it?
- Consider the rights of commercial, residential, upstream, and downstream entities

Anticipate Possible Liability for Ecological Changes

- Which liability issues may exist regarding invasive species? For example, the sea lamprey – should the current barrier be altered?
- Which liability issues may exist regarding the habitat of endangered species?
- Which liability issues might exist for the City of Grand Rapids and upstream and downstream governments for incidents or habitat degradation related to restored river bed, including possible effects on wetlands?
- Which materials will be brought out of and be brought into the River during the project?

Anticipate Possible Liability for Effects on Structures and Real Property

- Who is responsible for the design, maintenance, and management of downtown river structures? Dam owner is City, and City is the only one who can apply for a permit to remove it.
- Consider possible effects of changing river level on bridge supports; is there potential for “scouring” as previously submerged support structures are exposed to oxygen?
- Possible removal of 6th Street Dam will require upstream and downstream planning
- Who will be responsible for maintenance of new structure, if any?
- Riparian property rights are confusing; sometimes public and private landowners have conflicting rights

Consider Native American Impacts

- Impacts of digging and/or excavation on sites important to Native American communities
- Possible relevance of treaty boundaries

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Involve these People and Organizations in Future Public Processes:

- Businesses bordering the River
- City of Grand Rapids Planning Commission
- Disabilities Advocates
- Elected officials with districts on the Grand River
- Friends of Grand Rapids Parks
- Lower Grand River Organization of Watersheds (LGROW)
- Michigan Department of Transportation
- Native American communities in the surrounding areas
- Neighborhood Associations
- Plainfield Business District
- Senator Carl Levin
- Senator Debbie Stabenow

LIST OF ATTACHMENTS AND RESOURCES

(NOTE: inclusion does not represent a recommendation or endorsement by the subcommittee)

Attachments

- Grand River Restoration Stakeholder Process Flow Chart (Attachment A)
- River Quality and Use Subcommittee Participants (Attachment B)
- Data on rowers' use of the Grand River, provided by Mike Stemo (Attachment C)
- Draft List of Permitting Authorities, compiled by Michelle Storey and Matt Zimmerman (Attachment D)
- USFWS project letter to DOI (Attachment E)

Resources

- Green Grand Rapids Report:
http://grcity.us/design-and-development-services/Planning-Department/Documents/Green_Grand_Rapids_Report_LowRez_2011_10_04.pdf
- GVSU buoy study
- MSU Groundwater Study:
http://miottawa.org/Departments/BOC/WaterQuality/pdf/2012/Ottawa_Water_Study_2012.pdf

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CONCLUSION

It is important to highlight two major community contributions to the subcommittee's discussions. Subcommittee participant and Grand River Future Vision representative, Josh Smith, presented drawings of what their group envisions as a potential river restoration project. The design, created by Jim Parr, includes an additional boat launch site, kayak bypass, fish ladder with the capacity to host underwater viewing for educational purposes, and the removal of all the current cofferdams.

Additionally, subcommittee participant Dan O'Keefe of Michigan State University's Sea Grant program identified an opportunity to conduct an Integrated Assessment (IA) on river restoration through a federal and state Sea Grant funding program. O'Keefe emphasized the importance of an independent academic institution providing research and information on a suite of potential project design options.

It has been an honor and a privilege to convene and participate in this vibrant and energetic community process. Proposals to restore the namesake rapids to downtown Grand Rapids have been a catalyst for an initial vibrant community conversation about the long-term future of the Grand River in downtown. The ideas and concerns identified through this preliminary stakeholder process provide important input into the early stages of identifying and studying specific proposals for river restoration. We sincerely hope this report is a useful starting point for officials, advocates, and users of the Grand River as the community embarks on the next phase of considering restoration possibilities for the Grand River.

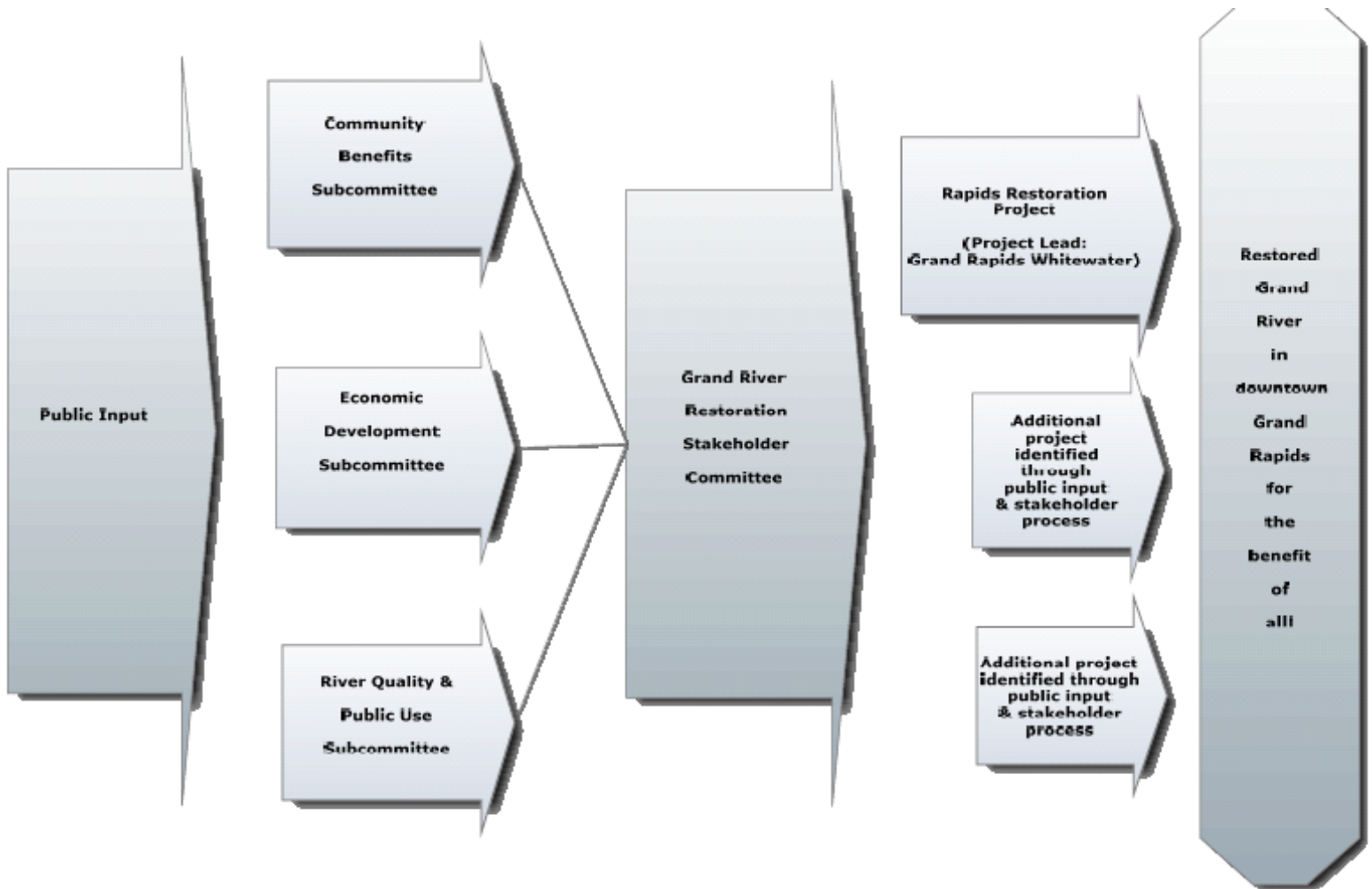
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ATTACHMENT A

Grand River Restoration Stakeholder Process Flow Chart



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ATTACHMENT B

River Quality and Use Subcommittee Participants

DISCLAIMER: Please note that organizational affiliation is shown for identification purposes only. It does not reflect organizations' opinions of this report or outcomes.

Rick Anderson: Rowing community

Jessica Barber: Marquette Biological Station, US Fish & Wildlife Service

Kevin Belk: City of Grand Rapids Police Department

Patty Birkholz: Michigan League of Conservation Voters Education Fund

Daniel Caillouet: City of Grand Rapids Fire Department

Jason Cook: Schrems West Michigan Chapter of Trout Unlimited

Jack Dingleline: East Lansing Ecological Services Field Office, US Fish & Wildlife Service

Linn Duling: Michigan United Conservation Club

Kim Easter: Michigan League of Conservation Voters Education Fund

Lee Finlayson: City of Grand Rapids Fire Department

Jeff Fritsma: US Army Corps of Engineers Regulatory, Grand Haven

Steve Heacock: Grand Action Board; Spectrum Health

Steve Heintzelman: Michigan Steelheaders Grand Rapids Chapter

Fred Keller: River Use and Quality Subcommittee

Kristi Klomp: Timberland Resource Conservation & Development Council

Mark Knudsen: Ottawa County Planning and Performance Improvement Department

Michael Lindley: (Huntington Bank) Grand Rapids Whitewater Board Member, Co-Chair River Quality and Use Subcommittee

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John H. Logie: Former Mayor of Grand Rapids

Richard MacKeigan: Grand Rapids/Kent County Convention Arena Authority (CAA) -
VanAndel Arena, DeVos Place, DeVos Performance Hall

Tim Marcus: Rockford Construction

Bethany Matousek: Michigan Department of Environmental Quality

Peter Michell: Rockford Construction

Peter Miller: Schrems West Michigan Trout Unlimited

Marc Montpetit: Schrems West Michigan Trout Unlimited

James Moyer: Grand Valley State University

Chris Muller: Grand Rapids Whitewater

Bill Nowicki: City of Grand Rapids Police Department

Thomas O'Bryan: Lake Michigan Area Office, US Army Corps of Engineers

Dan O'Keefe: Southwest District Extension, Sea Grant Michigan

Dustin Ordway: Ordway Law Firm, PLLC

Therese Poland: Northern Research Station, USDA Forest Service

Chip Richards: Grand Rapids Whitewater

Paul Sachs: Ottawa County Planning and Performance Improvement Department

Bob Schellenberg: Schellenberg & Evers PC

Josh Smith: J&D Mobile Sport Shop; Grand River Future Vision; Michigan Steelheaders
Grand Rapids Chapter

Mike Stemo: Grand Rapids Rowing Association

Elaine Sterrett Isely: West Michigan Environmental Action Council

Michelle Storey: Michigan Department of Environmental Quality

Greg Sundstrom: City of Grand Rapids Executive Office

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Michael Twohey: Marquette Biological Station, US Fish & Wildlife Service

Mike VanGessel: Rockford Construction

Mark Van Putten: Wege Foundation

Jim Vander Maas: Michigan Steelhead & Salmon Fishermen's Association

Allen Vanderberg: Ottawa County Administrator

Richard Wendt: Dickinson Wright PLLC

Jay Wesley: Fisheries Division, Michigan Department of Natural Resources

Rick Westerhof: Green Bay Fish and Wildlife Conservation Office, US Fish & Wildlife Service

Kristian Williams: Natural Resources Conservation Services, US Department of Agriculture

Matt Zimmerman: Varnum LLP

George Zuiderveen: Streamworks LLC; Rogue River Watershed Council

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ATTACHMENT C

Data on Rowers' Use of the Grand River, Provided by Mike Stemo

Category	SRAM Regatta		MACRA Regatta		Grand Regatta & Grand River Challenge	
	Metric	2011/2012	Metric	2011/2012	Metric	2011
Entries	Mens Entries	85	Mens Entries	109	Mens Entries	95
Entries	Womens Entries	75	Womens Entries	63	Womens Entries	55
Entries	Mixed Entries	2	Mixed Entries	5	Mixed Entries	21
Entries	Total Entries	162	Total Entries	177	Total Entries	177
Participants	Men	298	Men	504	Men	235
Participants	Women	288	Women	340	Women	166
Participants	Total	586	Total	844	Total	399

SRAM - MI State HS Championships

Forest Hills Central High School
 Forest Hills Central High School
 Lowell Crew Club
 East Grand Rapids High School
 Lowell Crew Club
 Ann Arbor Pioneer High School Crew
 Northview Crew Club
 Rockford Crew
 Forest Hills Eastern Crew
 Ann Arbor Huron High School
 Saline High School
 Crestwood High School
 Northville High School Rowing Club
 Ann Arbor Rowing Club
 Theodore Roosevelt High School
 Orchard Lake St. Mary's
 Riverview Community High School
 Our Lady Of Mt. Carmel Rowing Club

MACRA - Mid America Collegiate Rowing Association

CSU Viking Crew
 Denison University Crew Club
 Drake University Rowing
 Eastern Michigan University Crew
 GVSU Rowing Club
 Indiana University Mens Rowing
 John Carroll University Rowing
 Lawrence University Rowing
 Marietta College Rowing
 Marquette University Crew
 Mercyhurst College Rowing
 Michigan State University Crew
 Milwaukee School of Engineering Crew
 North Park University Rowing
 Northwestern University Crew
 Notre Dame Rowing Club
 Ohio State University Crew Club
 Ohio University Rowing

Regattas open to all participants

Ann Arbor Rowing Club
 AnthonyWayne HS Crew
 Augustan College
 Bay City Rowing Club
 Camp Randall Rowing Club
 Central Catholic Rowing
 Chicago Rowing Union
 Cincinnati - Clermont
 Cincinnati Rowing Club
 Cleveland Rowing
 Crystal Lake Rowing
 Culver Academies
 Dayton Boat Club
 Dennison University
 Des Moines Rowing Club
 Detroit Boat Club Crew
 Dublin Crew
 Ecorse Rowing Club

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SRAM - MI State HS Championships

Grosse Ile High School
Forest Hills Northern High School
Southgate Anderson High School
Skyline

MACRA - Mid America Collegiate Rowing Association

Purdue University
University of Chicago Crew
University of Cincinnati Rowing
University of Dayton Men's Rowing
University of Illinois Rowing
University of Michigan Crew
University of Minnesota Mens Crew
Vanderbilt Rowing Club
Washington University Crew

Regattas open to all participants

Forest Hills Central High School
Grand Rapids Rowing Association
Grand Valley State University Rowing Team
Greater Columbus
Greater Miami Rowing Center
Ignatius Chicago Rowing
Indianapolis Rowing
Indiana University Rowing Club
Lake Leelanau Rowing Club
Lansing Rowing Club
Lincoln Park Boat Club
Lowell Crew Club
Loyola Academy
Marietta HS
Mendota Rowing Club
Michigan Tech Rowing Club
Milwaukee Rowing Club
New Trier Rowing
North Suburban Crew
Quad Cities Rowing
Recovery on Water
RC "Energia"
Saint Ignatius High
St. Ursula Academy
The Rowing Group
Three Rivers Rowing
Toledo Rowing Club
Western Reserve Rowing Association
Wyandotte Boat Club

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ATTACHMENT D

**Draft List of Permitting Authorities,
Compiled by Michelle Storey and Matt Zimmerman**

The project as it stands now (river restoration and dam removal) would require:

- MDEQ/USACE Joint Permit Application. This would cover the following
 - Part 301, Inland Lakes and Streams
 - Floodplain Regulatory Authority found in Part 31, Water Resources Protection
 - *It is possible that a Part 31 permit could be required for the release of sediments from behind the dams, depending on how the dams are removed and depending on a decision that will be coming from the US Supreme Court this year on whether releases from within the same surface water system can be considered point source discharges.*
 - Part 315, Dam Safety
 - *It is possible that a Part 303 (wetlands) permit could be needed if the dam removals would flood wetland areas downriver.*
- Various program staff within the DEQ would review/comment on the application along with the US Army Corps of Engineers (if the project extended beyond Fulton Street) and the US Fish and Wildlife.
- An Environmental Impact Statement would likely be required to be submitted to the MDEQ.
- Soil Erosion and Sediment Control permits from the City of Grand Rapids and the MDEQ would be necessary.
- There may need to be analysis on whether any threatened or endangered species would be impacted by the removal, although no permit per se is given.
- The Joint Permit Application really drives and streamlines the entire process.

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ATTACHMENT E

USFWS Project Letter to DOI



IN REPLY REFER TO:
FWS/RJ/ELFO

United States Department of the Interior

FISH AND WILDLIFE SERVICE
East Lansing Field Office (ES)
2651 Coolidge Road, Suite 101
East Lansing, Michigan 48823-6316

October 30, 2012

Memorandum

To: Advisor, Urban Environmental Issues and the Anacostia Watershed
Office of the Deputy Secretary and America's Great Outdoors

From: Field Supervisor, U.S. Fish and Wildlife Service, East Lansing Field Office,
East Lansing, Michigan *Scott Hicks*

Subject: Grand River Restoration Project

I am writing regarding the Grand River Restoration Project at Grand Rapids, Michigan as a potential candidate under the Urban Waters Federal Partnership program within the Department of Interior.

The proposed project would remove the Sixth Street Dam in Grand Rapids to enhance recreational opportunities and also achieve objectives to benefit fish and wildlife, particularly lake sturgeon and fresh water mussels. The Grand Rapids Restoration Opportunities and Constraints document provided by the non-profit Grand River Whitewater group identified a number of fish and wildlife benefits including;

- 500% increase in fish holding habitat
- 5 times increase in habitat diversity
- 850% increase in sturgeon spawning habitat
- 100% upstream fish passage
- Direct improvement to aquatic habitat
- Propagation of 100,000 mussels
- 275% increase in sport fishing perimeter

While the detail provided in Opportunities and Constraints document is not sufficient to determine if all the fish and wildlife benefits are actually achievable, Region 3 is supportive of restoration projects that strive to improve conditions for lake sturgeon and fresh water mussels, species of particular interest to the United States Fish and Wildlife Service (Service).

Adding artificial structures to create white-water features typically involves altering river hydrology and hydraulics. To determine if the proposed fish and wildlife restoration benefits can be fully realized a hydrological evaluation would be needed to ensure the proposed whitewater

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features will not negatively impact sediment transport, channel morphology and stability, in-stream habitat for biota, fish passage, floodplain connectivity, or overall system function.

Maintaining the overall health and sustainability of the Lake Michigan fishery and the benefits it provides to the American public is also a high priority and important responsibility of the Service in Region 3. Presently the Sixth Street Dam serves as an effective barrier preventing sea lampreys access to spawning habitat above the dam. Should the dam be removed, sea lampreys would have access to many additional miles of high quality sea lamprey spawning habitat. This includes not only in the Grand River, but also many of its tributary streams. The ultimate result would be greater numbers of sea lamprey entering Lake Michigan and killing valuable lake trout and Pacific salmon.

The Service's sea lamprey control program has determined that the sustainability of the Lake Michigan fishery would be compromised if the Sixth Street Dam was removed. Currently, several tributaries to the Grand River downstream of the Sixth Street Dam are treated every three to four years at a total cost of approximately \$340,000. The cost to control sea lamprey abundance in the Grand River watershed would increase substantially and displace treatment efforts in other Great Lakes streams where sea lamprey numbers are effectively controlled. Even if additional funding was available to treat the Grand River system, there would still be a significant number of sea lampreys that survive a treatment and migrate to Lake Michigan and damage the fishery.

The Service can support the removal of the Sixth Street Dam and the many fish and wildlife benefits that could be achieved, but only under the condition that an effective barrier be installed to compensate for the removal of the Sixth Street Dam; inflatable and velocity barriers are not considered effective barriers at this time. The Service is available to advise and consult on the Grand River Restoration Project to achieve the projected benefits to the resource and the City of Grand Rapids.

cc: Deputy Regional Director, Midwest Regional Office (Bloomington, MN)
Mr. Mark Van Putten, President, Conservation Strategy LLC (Grand Rapids, MI)