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GRAND RAPIDS WHITEWATER RELEASES FINDINGS OF ECONOMIC IMPACT STUDY

Recreational use of restored stretch of Grand River estimated to bring $15.9M - $19.1M net new annual economic impact

Grand Rapids, Mich., *(September 8, 2014)* – Grand Rapids Whitewater today announced findings of the *Economic Benefits of the Grand Rapids Whitewater Project*, a study focused on the potential for expanded economic activity directly related to the restoration of a 2.2 mile stretch of the Grand River through downtown Grand Rapids. The study, conducted by Anderson Economic Group and commissioned by Grand Rapids Whitewater, estimates that expanded recreational use of the river and riverfront will stimulate net new economic impact of $15.9 million to $19.1 million per year.

This estimate takes into consideration new and enhanced tourism associated with recreational activity such as kayaking, fishing, rafting, stand-up paddling, wading and other forms of water and riverfront recreation. The estimates comprise net new visitor spending and new earnings for the Grand Rapids workforce.

"The estimated direct economic impact associated with recreational activity, alone, is tremendous," said Dr. Paul Isely, chair of the economics department at Grand Valley State University. Isely described the findings of the report at a riverside event this morning. "I expect the impact will be larger once you factor in the potential for new riverfront real estate development, improved land use, and business and talent attraction that come when a community enhances and maintains its natural resources and quality of life."

In May 2013, the Grand River was added to the Urban Waters Federal Partnership, and in November of last year, the full scope of the Grand River restoration concept plan was revealed, including:

- Removal of five dams between 6th and Pearl Streets to allow safe navigation of the river, restoration of the natural 18-foot drop in river elevation along a 2-mile stretch and exposure of a limestone shelf that will increase lake sturgeon and other native fish spawning habitats

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- Re-creating the boulder strewn rapids below the 6th Street dam
- Installation of an effective sea lamprey barrier that will also allow for regulation of upstream flows and provide better river conditions for rowing events

"After being awarded the Urban Waters Federal Partnership and releasing the preliminary restoration plan last fall, commissioning the AEG study was the natural next step in moving this project forward," explained Chris Muller, co-founder of Grand Rapids Whitewater. "We needed to demonstrate the viability of this project to our partners, members of the community, and funders. This report does that and lays the groundwork for additional economic impact studies the City is conducting in conjunction with the broader Downtown Plan and River Corridor Plan, which will focus on development on the banks of the river corridor."

The GRWW report conservatively estimates that taxable values of riverfront properties in the immediate area could increase by $117.7 million and the project could generate new development investment of $285 million and 1,520 related jobs.

Acknowledging the role healthy ecosystems play in human welfare and a thriving economy, Isely and other experts endorsed the findings of the AEG report and pointed to an expanded suite of benefits other Great Lakes communities have realized as the result of investments in water restoration projects.

"The results of this study are a local reflection of what we have seen throughout the Great Lakes Region—namely, that environmental restoration is economic restoration," said Todd Ambs, Healing Our Waters-Great Lakes Coalition campaign director and former president of the national conservation group River Network. "In fact, in 2007, the Healing Our Waters Coalition collaborated with the Brookings Institution on a report finding that every $1 invested in Great Lakes restoration produced at least $2 in economic benefit. Since then, over 2000 projects funded by the Great Lakes Restoration Initiative have cleaned up toxic hot spots, restored habitat and provided an economic shot in the arm for hundreds of communities."

Ambs is in town for the 10th Annual Healing Our Waters Great Lakes Restoration Conference, which was founded ten years ago by Peter Wege and which returns to Grand Rapids this week.

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Similar benefits are expected in Grand Rapids. The AEG report concludes that the restoration and enhanced aesthetics of the river and riverfront will generate additional economic benefits that are difficult to precisely quantify, including business and talent attraction and retention, enhanced quality-of-life and long-term environmental impacts. By opening the river to more and safer recreational activities, the Grand River restoration project will also help connect underserved communities to the river and to a vibrant downtown district.

"To say that the City of Grand Rapids is an enthusiastic partner in the Grand Rapids Whitewater project would be an understatement," said Mayor George K. Heartwell, speaking to the group of business and community leaders and GRWW supporters. "As the Grand Rapids Whitewater project, the River Corridor Plan, and the Downtown Plan converge, we will be engaged in a catalytic initiative that will transform our city and our region."

The idea of restoring the rapids to the Grand River grew out of the Green Grand Rapids Master Plan adopted by the City Commission in November 2011. This past March, the City Commission established the Grand River Restoration Steering Committee to coordinate restoration of the Grand River and riverbank development. In June of this year, the City Commission unanimously adopted a resolution supporting the efforts of Grand Rapids Whitewater to restore the historic rapids on the Grand River in downtown Grand Rapids.

The Dick and Betsy DeVos Family Foundation, the Frey Foundation, and the Wege Foundation underwrote the cost of the AEG study. Additional GRWW project funding has been generously provided by many others including Dick and Betsy DeVos Family Foundation, Downtown Grand Rapids Inc., the Dyer-Ives Foundation, Founders Brewing Company, the Frey Foundation, Grand Valley Metro Council, Healing our Waters-Great Lakes Coalition, the VanderWeide Family Foundation, and the Wege Foundation.

# # #

Grand Rapids Whitewater is a 501c3 organization with a goal to restore the rapids in the Grand River.

June 11, 2014

ANDERSON ECONOMIC GROUP

Economic Benefits of the Grand Rapids Whitewater Project

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I.Executive Summary

INTRODUCTION

Grand Rapids is known for many things: Furniture City, President Ford, the Medical Mile, ArtPrize, and even Fluoride. But the city's namesake—the rapids of the Grand River—have long been silenced. This, however, may soon change, with Grand Rapids Whitewater (GRWW) leading efforts to restore the rapids.

The Grand River runs through the heart of downtown Grand Rapids, but five dams quiet the rapids along a natural decline of some 18 feet from Ann Street to Fulton Street. This 2.2 mile stretch of river once featured large boulders, rock islands, and natural reefs. These were cleared, however, to facilitate the transfer of timbers in the mid to late 1800s. The mid to late 1800s also saw the introduction of dams as flow controls to facilitate timber transportation on the river.

The remaining dams serve no useful purpose; they require costly ongoing maintenance and prevent safe travel along the river. As a result, the Grand River through downtown Grand Rapids is largely unused, though its natural beauty preserves its place as a centerpiece in the downtown. The removal of the dams and restoration of natural bottom features will bring back not only the rapids; it will restore fish habitats; create new, safer recreational opportunities; and enhance the natural beauty of the river. This, in turn, will provide ecological, recreational, and economic benefits to the community.

Report Purpose. This study focuses on the potential for expanded economic activity related to the restoration of the Grand River in Grand Rapids. This includes quantitative estimates of net-new economic activity stemming from new and enhanced recreational uses of the restored river and riverfront. The study also provides a qualitative assessment of economic value stemming from: i) indirect uses of the river and riverfront (such as environmental improvements); ii) "quality-of-life" benefits that stem from enhancing and maintaining a community's amenities and natural resources; and iii) options for further economic enhancement, primarily in the form of new real estate development and enhanced land use along the riverfront.

APPROACH

To assess the economic benefits that are likely to be realized in Grand Rapids if the Grand River's rapids are restored, we:

1. Documented baseline economic, land use, and river usage conditions in Grand Rapids, as well as the proposed scope of the restoration;
2. Reviewed river restoration projects and related analyses that have occurred in other urban communities;
3. Estimated the scope and scale of new and enhanced uses of the restored river and riverfront in Grand Rapids;

4. Quantified an approximate range of net-new direct and indirect economic impacts that can be expected as a result of the new and enhanced uses of the river and riverfront; and
5. Assessed other benefits, including the more difficult to quantify economic benefits that are expected to stem from restoring the rapids to the Grand River in Grand Rapids.

OVERVIEW OF FINDINGS

Our analysis finds that:

1. *The Grand Rapids Whitewater project will physically transform the city's riverfront by restoring the Grand River's natural flows and habitats, while also improving recreational uses and accessibility.*
   a. Today, the City of Grand Rapids has a vibrant downtown core that is built on and around the Grand River. The river, however, is a relatively underutilized piece of the downtown landscape.
   b. The river restoration project will include the removal of five dams; the restoration of natural reefs, bottom features, and fish habitats; recreating the boulder strewn rapids that were originally below the 6th Street dam; and uncovering the submerged limestone shelves that once provided a natural spawning ground for lake sturgeon.
   c. The riverside will also undergo restorations and enhancements, with floodwall modifications, new boulder walls to provide natural floodwalls, two new riverfront parks, safe wading areas, additional walking and bicycle pathways, and improved boat ramps and portage takeouts.
   d. The project will also include a new hydraulic structure to provide more effective sea lamprey control than the 6th Street dam affords. It will also allow for regulation of upstream flows, providing a better environment for rowing events.

See "Scope of the Proposed Project" on page 6.

2. *Waterways have long served as economic backbones to communities, and river restoration projects elsewhere in the country demonstrate the Grand Rapids Whitewater project's potential benefits.*
   a. The Grand River was once essential to the Grand Rapids economy and furniture industry. It's economic value today, however, is muted. Restoring the river will allow more recreational uses that spur economic activity, including visitorship associated with kayaking, rafting, and fly-fishing, all of which are growing in popularity.
   b. The city of South Bend, Indiana undertook a riverfront redevelopment effort in the mid-1980s. The area has since developed into a thriving downtown and is the home of restaurants, shops, offices, and townhouses. An estimated $78 million in economic development has occurred since the redevelopment took place.

c. The Chattahoochee River has been a focal point for downtown development in Columbus, Georgia and Phenix City, Alabama. The cities collaborated on a 2013 project to bring more recreation to the area, including a whitewater park with year-round operations. Estimates put the whitewater park's economic impact at $7 to $11 million annually.

d. The City of Wausau, Wisconsin, in the mid 1980s, initiated a whitewater park project that has brought international recognition to the area. Shops and restaurants have experienced increased business since the development, and the downtown "river district" hosts numerous national and international kayaking and paddling competitions each year.

e. River-based recreation is growing in popularity, with stand-up paddling, whitewater and recreational kayaking, rafting, and fly-fishing each among the top-20 outdoor activities with the fastest growing rates of participation. The growing popularity of these activities will benefit the project, just as the project will afford area residents with significantly improved access to these activities.

See "Comparable River Restoration Projects" on page 9 and "River Recreation and Enhanced Recreational Opportunities" on page 13.

3. *The Grand Rapids Whitewater project will create a river and riverfront with significantly more recreational uses for residents and visitors alike. This expanded recreational use will stimulate net new economic impacts of $15.9 million to $19.1 million per year.*

a. The restoration project will create a natural amenity that is unmatched in the region, drawing locals and visitors to enjoy being in, on, and near the river. Many of these new recreational users of the river will spend money at local restaurants, hotels, shops, and other venues while in Grand Rapids, thereby generating direct economic impacts for the community.

b. We estimate that the restored river and riverfront will generate between 232,434 and 538,313 new visitor days for Grand Rapids each year. The low-end estimate is a conservative scenario based on data and observations of smaller-scale river restoration projects. The higher estimate is a potential scenario reflecting possible increased draws given the project's location, broad scope, potential to attract several major events, and overall community and statewide interest.

See "Estimating Net New Recreation Users" on page 19 and "Net New Visitorship Estimates" on page D-2.

c. The economic impact under the conservative scenario is $15.9 million in net new activity each year. This is driven by direct net new spending of $12.9 million which stimulates an additional $3.0 million in indirect economic impacts within Grand Rapids. This economic impact includes 80 new jobs and nearly $2 million in new earnings for the Grand Rapids' workforce.

d. The economic impact reaches $19.1 million under the potential scenario, with $15.5 million in direct impact and $3.6 million in indirect impact, as well as 96 jobs and $2.3 million in new earnings for the Grand Rapids workforce.

TABLE 1. Economic Impact Summary Tables from Recreational Use of Restored Grand River in Grand Rapids

	Conservative Visitorship Assumptions	Potential Visitorship Assumptions
Annual Net New Economic Activity	$15.9 million	$19.1 million
Annual Net New Employment	80 jobs	96 jobs
Annual Net New Earnings	$1.9 million	$2.3 million

Source: Anderson Economic Group, LLC

See "Economic Impacts from Direct New Uses of the Grand River" on page 19, as well as "Economic Impact Calculations" on page D-1 of the appendix.

4. *The Grand Rapids Restoration project will also provide economic, ecological, and other benefits beyond those supported by spending from new recreational users and visitors.*

   a. An improved river and riverfront will create a desirable environment for developing properties on and near the river. Some 60 percent of parcels along the Grand River in Grand Rapids are currently not at a highest-and best use, illustrating significant opportunity for new investments.

   b. If just 50 percent of the 75 parcels that are currently at a low level of utilization were to be redeveloped to take full advantage of the river views and adjacency, we estimate that overall taxable value would increase by $117.7 million. See "Improved Land Uses and Fiscal Benefits" on page 25.

   c. This new development will not only increase property values and related revenues to the city; it will also bring significant new spending and employment as construction takes place. Past development projects in the city suggest that the related investment could total $285 million with 1,520 jobs. We anticipate that such investment activity could be realized within ten years of the restoration taking place. See "Improved Land Uses and Fiscal Benefits" on page 25.

   d. The restoration will also enhance Grand Rapids' identity as a vibrant community with a range of cultural, recreational, and educational amenities. This mix is essential for communities looking to attract and retain young professionals, families, and the businesses that require a trained and skilled labor force.

   e. Environmental benefits include restored natural habitats, improved protections against invasive species, and improved flood controls. A

re-exposed bedrock shelf north of the 6th Street dam will restore a natural spawning ground for lake sturgeon. Other restored bottom features will also provide improved fish habitats, while a new hydraulic gate will provide a more reliable sea lamprey barrier. Removing the dams will result in less debris buildup and related flooding.

f. Additional benefits include a safer river way, increased access to healthy activities, additional educational opportunities, and enhanced national and international awareness of the community. These all provide immeasurable value to the community, both for current and future generations.

See "Improved Land Uses and Fiscal Benefits" on page 25.

ABOUT ANDERSON ECONOMIC GROUP

Anderson Economic Group, LLC offers research and consulting in economics, finance, market analysis, and public policy. Since AEG's founding in 1996, the company has helped clients including universities, state and local governments, non-profit organizations, and private and public companies. AEG has completed economic impact studies for clients located throughout the United States. For more information on the report's authors, please see "About AEG" on page F-1.

II. The Grand Rapids Whitewater Project

ABOUT GRAND RAPIDS WHITEWATER

Grand Rapids Whitewater is a non-profit organization dedicated to restoring the Grand River and creating a one-of-a-kind centerpiece in downtown Grand Rapids. GRWW grew out of a citywide green infrastructure master planning process, Green Grand Rapids, that focuses on physical infrastructure and the city's natural amenities, recreation, and public health. During the planning process, Green Grand Rapids combined the idea of returning the rapids to the Grand River with improving outdoor recreation opportunities. Now, Grand Rapids Whitewater champions the effort to restore and revitalize the river.

Grand Rapids Whitewater held focus group meetings in 2008 and 2009 to discuss river recreational opportunities and what other cities have done to increase downtown river usage. The focus soon grew beyond recreational elements to include a comprehensive restoration of the Grand River. In 2012, representatives from GRWW began holding meetings with stakeholder groups.[1] By May of 2013, the U.S. Environmental Protection Agency announced that they would include the Grand River Restoration in its Urban Waters Federal Partnership program, and various state and local agencies also voiced support for the project.

SCOPE OF THE PROPOSED PROJECT

The following section describes the different aspects of the proposed restoration project, as described in the Grand Rapids Whitewater Preliminary Plan that was released in November 2013. We also provide maps on pages B-2 and B-3 to illustrate where the project will take place.

Dam Removals

The preliminary plan involves removing five the dams between 6th and Pearl Streets, including the 6th Street dam.[2] These dams currently do not serve a purpose and they make navigating the river nearly impossible and very unsafe. They are also aging and will require significant maintenance if left in place. Four of the five dams are lower, and may not be noticed by most visitors to the riverfront. The Sixth Street dam, however, is much more noticeable and well known. These dams will be removed in their entirety to allow the natural river drops to return.

1. "Grand River Whitewater Park Preferred Alternative," Green Grand Rapids, 2009, pp. 5-6.
2. This dam is sometimes referred to as the 4th Street dam, owing to the fact that it crosses the river where 4th Street would, if it were extended. However, since 6th Street is the closest bridge to the dam, we refer to it as the 6th Street dam.

Riverbed Restoration

Another significant aspect of the project is the work that will be done to restore the riverbed to its natural form. A 12-acre limestone shelf that is currently submerged upstream of the 6th Street dam will be revealed, and the reefs and boulders that will be exposed in the river upstream of Bridge Street will increase lake sturgeon spawning habitats by 850 percent. These are important features because they are essential for the prosperity of native fish species.[3]

Bedrock islands between I-196 and Fulton Street will create a wading path through downtown. Boulders and rock formations will create 9,400 feet of whitewater rapids with eight whitewater features that paddlers will be able to enjoy. Pools with calmer water separating these rough elements will increase fish holding habitats by 500 percent.[4]

FIGURE 1. Wading Shoals and Boating Route in Downtown Grand Rapids

Source: Grand Rapids Whitewater Preliminary Plan

Riverside Enhancements

The restoration will reach beyond the river bottom to also include shoreline and accessibility elements. Included in the project is the addition of a riverside park north of Leonard Street on the east side of the river, which will add more pathways and connect to existing parks. There is an existing network of pathways along the Grand River, though some portions are currently disconnected. The restoration will also preserve four acres of native riparian forest along the river.

3. "Grand Rapids Restoration," Grand Rapids Whitewater, 2013.
4. Ibid.

Signage, and boat launches will be added to the river between Ann Street and Highway 131 to improve access and navigability. Portage paths will be added on both sides of the river near the existing Fish Ladder and on the east side of the river upstream from 6th Street. On-shore signs near parking areas will assist park visitors with finding their way around the network of parks. In addition, rescue ladders will be added to existing flood walls to improve safety and allow rescue workers to more easily reach stranded river users. The fish ladder will be left intact, and another fish ladder will be constructed on the east side of the river, between Ann and Leonard Streets. Finally, a hydraulic barrier upstream from Leonard Street will assist with flow control and raising water levels, which will allow rowing events upstream to take place.

FIGURE 2. The Grand Rapids Fish Ladder

Source: Pure Michigan

Other Features and Enhancements

The construction of an effective sea lamprey barrier is an important part of the project. The hydraulic barrier that will be constructed upstream from Leonard Street will act as a barrier to the lamprey during their seasonal migration and will prevent them from traveling upstream. It can also be used to help control upstream water levels so that other recreational uses, including rowing events, will not be interrupted by the change in flows. This will provide a more dependable rowing venue, making it more attractive for competitive events.

COMPARABLE RIVER RESTORATION PROJECTS

To illustrate the benefits of the proposed river restoration project, we reviewed economic impact studies and news articles about previously completed river restoration projects. River restoration projects prove to increase both use value and non-use value of the river and riverfront by increasing recreational opportunities and providing a renewable resource that generations to come will be able to enjoy. Below is a summary of five projects and the benefits they brought to their respective cities.

South Bend, Indiana. The South Bend, Indiana waterfront, which was once a filled-in channel, is now home to restaurants, shops, office buildings, condos, and townhomes.[5] The city of South Bend initiated a comprehensive riverfront development in 1982. The development now attracts tens of thousands of visitors each year for rafting, kayaking, jogging, and biking. As part of this project, the city developed the East Race Waterway, a 1,900-foot-long whitewater course, which opened in 1984. South Bend also incorporated the East Race into the city's park system by expanding the River Walk (a walking and jogging path that follows the river through the city) and connecting the city of South Bend to neighboring Mishawaka.

FIGURE 3. Watercraft Rescue Training at the East Race Waterway

Source: South Bend Parks and Recreation

The waterway has been the focal point of downtown development and activity in South Bend. Aside from race events, the city also hosts weekend concerts near the river, and the South Bend Fire Department coordinates the Indiana River Rescue School, one of the leaders in the development of personal

5. Blasko, Erin, *East Race Waterway celebrates 30 years*, South Bend Tribune, July 19, 2013, <http://www.southbendtribune.com/news/local/keynews/localeconomy/article_553a15b8-f0b4-11e2-a654-001a4bcf6878.html>, accessed October 30, 2013.

watercraft rescue techniques.[6] Over 300,000 people have gone down the race since it opened, and according to the city's Department of Community Investment, an estimated $78 million in economic development has occurred since the race opened.[7]

Columbus, Georgia and Phenix City, Alabama. The cities of Columbus, Georgia and Phenix City, Alabama collaborated to implement the Chattahoochee River Restoration project in 2013. The river restoration project is expected to create additional business activity; increase property values for those near the river; and further the process of each community's ongoing revitalization.[8]

The project included removal of two dams and creation of a whitewater park to help increase recreation on the river. A market and economic analysis estimates that the whitewater park alone would attract between 60,000 and 100,000 participants per year. The total direct economic impact of the whitewater venue was estimated to be between $4.2 million and $7 million. The total economic impact of the park, including direct and indirect impacts, is expected to total between $7.1 and $11.9 million annually for the two cities.[9]

Wausau, Wisconsin. In the 1970s, outdoor enthusiasts sought a way to improve and increase recreational opportunities on the Wisconsin River in Wausau, Wisconsin. Public and private entities worked together to improve the river channel and the entire watershed area to protect the waterway. In 1984, the city's River Edge Commission initiated work on a whitewater park, which included modifications to the river as well as a landscaped portion of the riverfront in the downtown area for spectators.

In addition to bringing income to the local economy, the course has provided cultural benefits and exposure to the downtown. Wausau has hosted international events since 1985 and the whitewater portion of the park is a training site for the U.S. Olympic Kayak and Canoe teams. According to Main Street Wausau, the town's downtown development authority, the races bring new

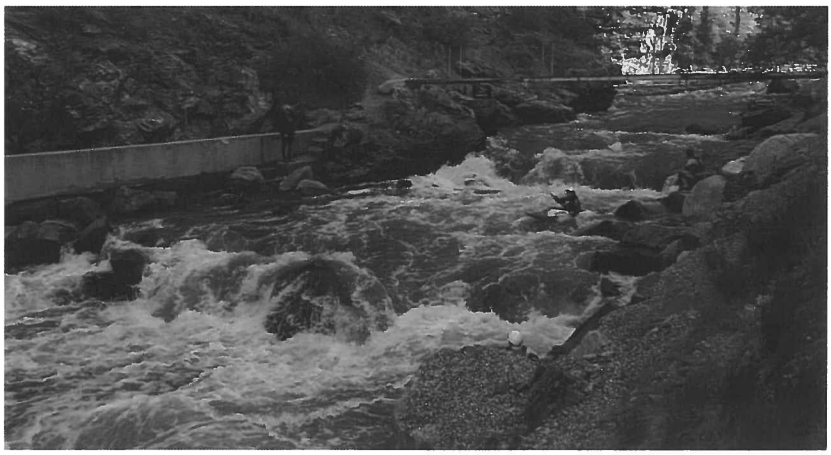
6. McMinn, Paul, "A Success Story: The East Race Waterway," South Bend Parks and Recreation, January 2013, <http://sbpark.org/news/east-race-celebrates-30-great-years/>, accessed December 11, 2013.
7. South Bend Parks and Recreation, <http://sbpark.org/news/east-race-celebrates-30-great-years/>, accessed December 11, 2013.
8. Caldwell, Carla, *First Columbus whitewater season a hit, fuels development,* Atlanta Business Chronicle, October 3, 2013, <http://www.lakenews.com/News.asp?ID=017FCE66-37B4-49EF-B8B9-A278B0461484&SiteID=GA019>, accessed November 13, 2013.
9. Adams, Tony, *$24.4 million Chattahoochee River restoration project a blend of public, private funding,* Ledger-Enquirer, April 6, 2013, <http://www.ledger-enquirer.com/2013/04/06/2453838/244-million-chattahoochee-river.html>, accessed November 13, 2013.

demographics downtown and increase interest in the central business district.[10] This type of exposure provides far-reaching benefits for Wausau that cannot be measured in dollars and cents.

Golden, Colorado. The city of Golden, Colorado is the home of an extensive trail system called Clear Creek that is frequented by fishermen, kayakers, runners, and bikers all year. Clear Creek has been the centerpiece of Golden's commerce since the city was founded, and is still the main hub of activity.[11] As an expansion to the extensive trail system, the city of Golden implemented the Clear Creek Whitewater Park in 1998 and commissioned an economic impact study in 2000 which estimated visitorship for the whitewater park portion of the trail system.

The direct economic impact from kayaker expenditures alone is estimated at $913,545 to $1.15 million annually. The study also estimates that the total annual impact of the whitewater park comes to between $1.4 and $2.0 million.[12] The park hosts multiple events per year and is another training site for the U.S. Olympic Kayak Team, so it is reasonable to estimate that the city realizes many economic benefits due to the popularity of the whitewater park, such as increased spending at hotels, shops, and restaurants.

FIGURE 4. Man-made Stairstep Features at Clear Creek



Source: American Whitewater

10. VanBelleghem, Luke, National Main Street Center, *Network Notes: Wausau's Whitewater Enhances its Downtown Draw*, <http://www.preservationnation.org/main-street/main-street-news/2003/05/network-notes-wausaus-whitewater.html>, May 2003.

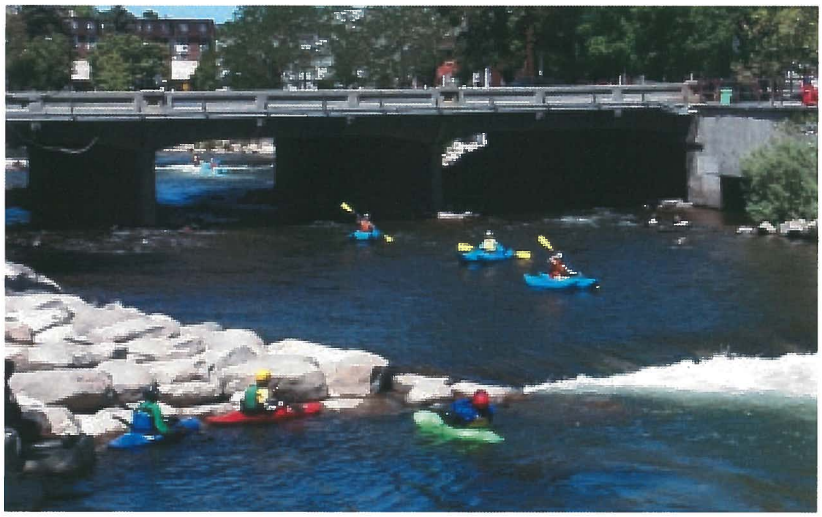
11. Golden, Colorado Visitors Center, <http://visitgolden.com/things-to-do-golden/clear-creek-trail-and-white-water-park:, accessed March 24, 2014.

12. "Preliminary Evaluation of the Beneficial Value of Waters Diverted in the Clear Creek Whitewater Park in the City of Golden," Stratus Consulting, 2000.

Reno, Nevada. The city of Reno, Nevada sought a way to increase recreation opportunities and build on the vibrancy of its downtown resort area. In 2004, the city commenced development of the Truckee River Whitewater Park. The park is located in the heart of Reno and draws tens of thousands of visitors per year to its annual River Festival, and to participate in and watch paddling competitions. It also offers numerous outdoor recreational opportunities for residents and visitors. In addition, the success of the park inspired a nearby town to undertake a similar river and riverfront development project.

An economic impact study conducted by the City of Reno estimated that with two events per year (an organized whitewater event and a festival event) and normal park usage, the direct economic impact of the Truckee River Whitewater Park ranges from $1.9 to $4.1 million annually.[13] The study also estimated that the economic activity created by the park would generate tax revenues of up to $263,000 per year.

FIGURE 5. Recreational Kayaking at the Truckee River Whitewater Park



Source: Sierra Nevada Geotourism

13. "Truckee River Recreation Plan," Resource Concepts, 2004.

RIVER RECREATION AND ENHANCED RECREATIONAL OPPORTUNITIES

River-based activities have been growing in popularity in the United States. According to a study published by The Outdoor Foundation, stand-up paddling, whitewater and recreational kayaking, rafting, and fly-fishing were among the top 20 outdoor activities in terms of first-time participants in 2012. Stand up paddling had the highest percentage of first-time participants at nearly 60% (meaning that of all the people who participated in stand up paddling in 2012, 60% were trying it for the first time). Whitewater kayaking had a first-time participant rate of 32%; rafting 28%; recreational kayaking 25%; and fly fishing 21%.[14]

Not all outdoor recreation activities happen in or on the river after a restoration project. Running, jogging, and trail running were the most popular outdoor activities based on the participation rate in 2012. About 19% of Americans, or 53.2 million, participated in these activities. Running, jogging, and trail running were also among the most popular outdoor activities in terms of the frequency of participation. In 2012, runners/joggers averaged 87 outings each.

Having more outdoor recreation opportunities within the city of Grand Rapids may encourage residents to participate more often. According to The Outdoor Foundation's study, 26% of Americans do not participate in outdoor recreation because they do not have the time; 21% feel they do not have the skills or abilities; 18% do not have anyone with whom to participate; and 9% skip out because places for outdoor recreation are too far away. For many people, one accessible, popular outdoor activity leads to interest in others. The two most popular "gateway" activities in 2012 were running, jogging, and fishing.[15] So, the river-based and non-river based recreation participants may feed into one another.

14. Outdoor Participation Report, The Outdoor Foundation, 2013.

15. Outdoor Participation Report, The Outdoor Foundation, 2013.

III.Economic Overview: With and Without The Rapids

A strong job-base, several colleges and universities, and diverse cultural and recreational offerings have contributed to the current vibrancy in downtown Grand Rapids. As discussed below, these aspects are core to the community today, and stand to be enhanced further by the restoration of the Grand River through downtown Grand Rapids.

GRAND RAPIDS TODAY

Business and Employment

Grand Rapids has one of Michigan's strongest and most diverse economies, with significant manufacturing, healthcare, professional service, and retail industry employers. Downtown Grand Rapids is home to large employers including the Spectrum Health System, several banks, medical research facilities, and a number of law firms. There are also a wide variety of restaurants, locally owned shops, and educational institutions in the downtown.

In 2011, 71,092 people were employed in downtown Grand Rapids, representing an increase of 6.4 percent from 2005. The downtown area experiences a net inflow of 55,378 workers during the day, providing a significant boost to the market area.[16] See Table 2 on page A-4 for further employment data.

Colleges and Universities

Seven colleges and universities have a major presence in downtown Grand Rapids. These schools—Davenport University, Grand Rapids Community College, Kendall College of Art and Design, Ferris State University, Michigan State University College of Human Medicine, Grand Valley State University, and Western Michigan University—have a combined enrollment of approximately 26,000 at their downtown Grand Rapids campuses, contributing to the active and vibrant population of the area. An additional 18,000 students are enrolled at other colleges in Grand Rapids, including Aquinas College, Calvin College, Cornerstone University, Grace Bible College, and Kuyper College.[17]

Arts, Culture, and Entertainment

Downtown Grand Rapids is the home of three main event centers: DeVos Place convention center, DeVos Performance Hall, and Van Andel Arena. These venues allow the downtown to host conferences and conventions for large organiza-

16. On the average day more than 67,000 people commute into downtown Grand Rapids for work while just 11,955 people who live in downtown leave to work elsewhere. U.S. Census Bureau, Center for Economic Studies, <http://onthemap.ces.census.gov/>, accessed on October 31, 2013.

17. Enrollment data collected from university and college websites.

tions; public shows such as the Michigan International Auto Show; performances by the Grand Rapids Symphony and the Grand Rapids Ballet; and other events such as concerts, basketball games, and Grand Rapids Griffins hockey games.

The downtown is also home to The Gerald R. Ford Presidential Library and Museum and The Grand Rapids Public Museum, both located on the river. The Grand Rapids Art Museum and The Grand Rapids Children's Museum are near the river, and ArtPrize, an annual open-art competition that began in 2009, showcases venues along the riverfront. See Map 4, "Overview of Downtown Colleges, Museums, and Event Centers," on page B-5 for the locations of downtown attractions relative to the Grand River.

Parks and Recreation

Downtown Grand Rapids is home to a number of parks, including three along the Grand River. Canal Street Park and 6th Street Bridge Park are located on the east bank of the Grand River between Leonard Street and I-196. Ah-Nab-Awen Park is on the west bank of the river next to the Gerald R. Ford Museum. These parks primarily offer shore-based recreation, such as picnic space and play areas. There are pathways through the parks, but they are disconnected in some places from other portions of the riverfront.

Recreational activities on and in the river are limited, primarily by safety issues. The existing dams create a perpetual circle of water on the downstream side, leaving a turbulent flow that can roll or flip boats and seriously injury people.[18] The most notable water-based activity is fishing near the 6th Street dam: steelhead in March through April and November through December; salmon mainly in August through October; and bass, carp, perch, and walleye year-round. Many fisherman wade into the river when flows are not too high; others fish from the East Wall or small boats.

A RESTORED GRAND RIVER IN GRAND RAPIDS

A restored Grand River will provide for an even more vibrant downtown core in Grand Rapids to the benefit of existing businesses, attractions, and amenities.

Current and future residents of downtown Grand Rapids, as well as the greater Grand Rapids region, will gain access to new recreational activities. The downtown area will be more attractive to young professionals, as well as people seeking a "live-work-play" environment.

18. There are an average of 12 accidents each year on the river in Grand Rapids. Walker, Heather, "DNR: 6th Street Dam a 'drowning machine,' WoodTV8, August 19, 2013, <http://www.woodtv.com/news/local/grand-rapids/dnr-6th-street-dam-a-drowning-machine>, accessed November 12, 2013 and *River Quality and Use Subcommittee Report to the Grand River Restoration Stakeholder Group*, 2013.

New river recreation will benefit existing businesses by bringing more potential consumers to the downtown area. It may result in new businesses being opened, particularly those specializing in paddle sports, fishing, and other recreational equipment. Outdoor recreation has been a stable and growing part of the recreation economy, with growth of about five percent annually from 2005 to 2011.[19] As such, the new business opportunity will be backed by a growing and resilient consumer base.

The overall business community, as well as colleges and universities, will also benefit from the creation of an environment in which workers want to live. An amenity such as the whitewater course and better access to the river for all users will add to the appeal of Grand Rapids, helping local businesses better attract potential employees to the market, and colleges and universities to attract new students.

Establishing a reputation in Grand Rapids as an outdoor recreation center presents opportunities to use the nearby DeVos Place to host industry trade shows or conferences. A reverse effect may arise as well; visitors of the convention center or performance hall may choose to visit the waterfront before or after their respective events, or observe an event happening on the same weekend as a show.

Recreational Benefits

The project will grow Grand Rapids' reputation as an outdoor recreation center by providing increased opportunities for visitors to participate in outdoor recreational activities. The modified river environment will allow Grand Rapids to host kayak, canoe, and rafting events which provide opportunities for both participation and observation. Fishing in the Grand River will be improved because migratory fish will be able to more easily reach their natural spawning areas, and their populations will be able to grow.

The river restoration project will help create new uses for the three parks that are located along the river. Downtown residents may choose to use the expanded network of walking and biking paths for outdoor recreation, which is an important quality of life factor. The parks are also an attractive amenity that bring local college students to the riverfront to enjoy the scenery and observe or take part in other recreational activities.

19. Outdoor Recreation Economy report, 2012, Outdoor Industry Association.

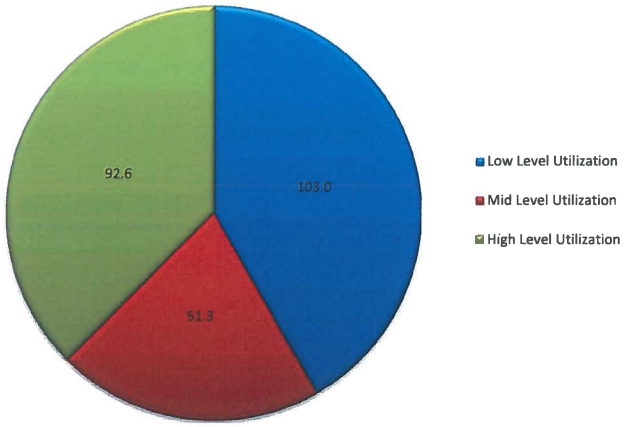
RIVER RESTORATION AND LAND USES

The Grand River riverfront in Grand Rapids features a mix of public and private land uses. As part of this study we assessed these parcels, first via satellite imagery and then during an on-foot survey. The assessment included visual inspection of the exterior of the properties to gauge the level of use of the property.

We designated each parcels as having a high, mid, or low level of utilization based on connectivity with surrounding uses; whether the use takes advantage of the riverside location; and whether the use would at all be hindered if it were not located on or near the river. The results from this assessment are as follows:

- These parcels cover nearly 247 acres with a varying degree of development density. Some small pieces of property include high-rise residential buildings with tens, if not hundreds of parcels, while other parcels are larger and contain no development.

FIGURE 6. Grand River Adjacent Land Utility, in Grand Rapids, in Acres



Source: Anderson Economic Group, LLC

- Of the total land area, 41.7 percent (103 acres) has a low level of utilization. This acreage is primarily located north of downtown, between Ann and 6th Streets. Most of this acreage includes parking lots and public works buildings. An area between Fulton and Wealthy Streets that houses parking lots and abandoned structures also fall into this low utilization category.
- About 20.8 percent (51.3 acres) has a mid-level utilization. This acreage is scattered throughout the downtown area and primarily consists of small offices, single-use buildings, and a few acres that have plans for new construction in the near future. These areas gain value from their proximity to the river and have the potential to be upgraded to a higher use.
- About 37.5 percent (92.6 acres) has a high level of utilization. These acres are primarily located in the central downtown area between I-96 and Fulton Street. Acres that we qualified as high-level utilization include condos/apartments, hotels, and mixed-use buildings. They can serve many people at once and take advantage of their riverside location. Some acreage also qualified as high-level utilization if it included open space, parks, or museums.

See Figure 6, "Grand River Adjacent Land Utility, in Grand Rapids, in Acres," on page 17 and Map 3, "Highest and Best Use Assessment," on page B-4 for our land utility assessment.

Later in this report, in "Improved Land Uses and Fiscal Benefits" on page 25, we further discuss the opportunity and benefits from enhancing these land uses.

IV.Economic Impacts from Direct New Uses of the Grand River

The most visible and immediate economic benefits from many river restoration projects relate to new and increased recreational uses of the river and riverfront. These direct uses draw visitors to the community. They also stimulate current residents to partake in new activities, or to stay home instead of traveling elsewhere for the activities. With this recreational activity comes spending that otherwise would not have occurred, fueling additional economic activity, employment, and income.

ESTIMATING NET NEW ECONOMIC IMPACT

A "net economic impact" is the level of change in economic output directly and indirectly caused by a given project, event, policy, or other action. This new economic activity is driven by increased expenditures. Expenditures that would have occurred anyway are not counted, nor are expenditures that are immediately directed outside of the local economy. For example, we do not count, as net new, expenditures related to the level of fishing activity that already takes place. We only count the spending that would be above and beyond this existing level. See "Economic Impact Calculations" on page D-1 for a further discussion of this methodology.

ESTIMATING NET NEW RECREATION USERS

The proposed Grand Rapids Whitewater project will attract a variety of new river users to the city of Grand Rapids. To get an accurate picture of the impacts due to the project, we defined four expected user groups:

- Whitewater users,
- Other paddle and boating users,
- Fishing users,
- Shore-based recreation users and spectators

TABLE 2. Grand Rapids Whitewater Project Visitor and User Estimates

	Annual Net New User Days Low End Estimate	Annual Net New User Days High End Estimate
Whitewater Boating Users	13,090	15,400
Non-Whitewater Boating Users	42,500	50,000
Fishing Users	66,844	80,213
Shore-based Users	110,000	392,700
Total	**232,434**	**538,313**

Source: Anderson Economic Group, LLC

Usage estimates for each of these groups were derived using local market data, realized usage of analogous projects (see "Whitewater Boating User Estimates" on page 20), and results from national surveys of recreational activities and

frequency of participation. These sources also informed our estimates of the share of overall users who are local compared to visiting, and the share of those visitors who are likely to come primarily as a result of the newly available river recreation (as opposed to those who visit and use the river, but would have visited even if not for the availability of river recreation).

Using these figures, we calculated net new user days, under both a conservative and potential scenario, that Grand Rapids may experience as a result of the restoration project. The conservative scenarios is based on data and observations of smaller-scale river restoration projects. The potential scenario reflects possible increased draws given the project's location, broad scope, and overall community and statewide interest. The calculations are summarized below, and presented in more detail in "Net New Visitorship Estimates" on page D-2.

Whitewater Boating User Estimates

To estimate the expected number of whitewater-related users for the planned Grand Rapids Whitewater restoration project we examined usership data and estimates from other whitewater parks in cities of a similar population size to Grand Rapids, including:

- South Bend, Indiana had a population of 101,168 in 2010 and its whitewater park, East Race Waterway, opened in 1984. The course is used by 500 to 700 people on a typical Saturday or Sunday. Over 300,000 people have gone down the course since the raceway opened.[20] This averages to about 10,000 per year since the 1984 opening.
- Reno, Nevada had a population of 225,221 in 2010. Its year-round Truckee River Whitewater Park opened in 2004, and it was originally estimated that total annual usage would be approximately 10,000 though some thought it could be as high as 50,000.[21] More recent observations peg the attendance to be in the 70,000 to 80,000 range, including spectators and non-river users.[22]
- Columbus, Georgia and Phenix City, Alabama had a combined population of 222,707 in 2010. The Chattahoochee River Whitewater Park opened in the spring of 2013 and the course is about two miles long. According to a recent market and economic analysis, between 60,000 and 100,000 participants are expected per year (including those actually using the river and patrons viewing the event).[23]
- Fort Collins, Colorado had a 2010 population of 143,986. A whitewater park has not yet been constructed but researchers at Colorado State University con-

20. South Bend Tribune and South Bend Parks and Recreation.

21. Truckee River Recreation Plan and Reno's Riverwalk Merchants Association.

22. "Whitewater Parks Revitalize Local Economies." Canoe & Kayak Magazine, January 18, 2008.

23. Chattahoochee River Whitewater and Chattahoochee River Restoration Market and Economic Impact Analysis.

ducted an economic assessment study on expected usage. Depending on river flows, between 12,992 and 14,616 users are expected annually.

Our total usership estimate for pure whitewater activities (whitewater paddling) on the Grand River in Grand Rapids ranges from 8,500 (conservative) to 10,000 (potential) users per year. This includes visiting users and local users, but not spectators.

Visitors from outside the city are assumed to comprise 90 percent of the total usership. It is assumed that only 20 percent of these visitors would have visited anyway. These assumptions reflect the unique nature of the attraction and the interest that people from outside of the area will have in it. The estimate also reflects a shorter season relative to several of the examples cited above.

Local users are assumed to comprise the other ten percent of the whitewater user base, and we further assume that 50 percent of this local base would have participated in some substitutable form of recreation within the area, thus not providing a net new benefit.

After considering user origins and substitution activities, we further assume that each user will spend two days in the area. From this we arrive at a range of 13,090 (conservative) to 15,400 (potential) net new visitor days attributable to whitewater recreation.

Non-Whitewater Boating User Estimates

The restoration project will provide for a river experience that is also conducive to many other rowing and paddle sports, including recreational kayaking, canoeing, rowing, stand-up paddling, and other primarily non-motorized boating. To estimate related usership, we observed national industry statistics indicating that recreational kayaking and canoeing participation is approximately three times greater than whitewater kayaking participation. Recognizing that some of this difference in participation level is the greater accessibility that most people have to waters for non-whitewater activity, we have assumed that total canoe, recreational kayaking, rowing, and other non-whitewater boating uses will be about four times the whitewater kayaking usage estimate, or 34,000 to 40,000.

Visiting non-whitewater boating users are assumed to comprise 75 percent of the total usership. It is assumed that 25 percent of these visitors would have visited anyway. These assumptions reflect the unique nature of the attraction, but also realize that non-whitewater recreation options are quite available elsewhere in the region and across the state, thus the lower visitor share and higher rate assumed for visitors who would have visited anyway relative to the whitewater user assumptions.

Local users are assumed to comprise the majority, 25 percent, of non-whitewater boating users. We further assume that 75 percent of this local base would have participated in some substitutable form of recreation within the area, thus not providing a net new benefit. This again reflects the currently available non-whitewater opportunities available throughout the area.

After considering user origins and substitution activities, and further assuming that each non-whitewater boating user will spend two days in the area, we arrived at a total of 42,500 to 50,000 net new visitor days attributable to non-whitewater river recreation.

Fishing User Estimates

The Grand River in Grand Rapids is already well-known as a fishing destination, especially among local and regional populations. The restoration project, however, will provide greater fishing opportunities along the entire project area, while maintaining many of the elements that make the 6th Street dam area such a popular fishing spot today. In total, the project is expected to add 500 percent in fish holding habitat and provide a 275 percent increase in sport fishing perimeter.[24]

To estimate fishing-related visitors we primarily relied on a Grand River Assessment conducted by the Michigan Department of Natural Resources (MDNR) in 2003 and 2004. Survey statistics estimated just over 46,000 angler trips to the Grand River in the Grand Rapids metropolitan area. In our calculations, we estimate that the number of angler trips will increase by approximately 25 to 50 percent due to improved fishing conditions and larger fish populations due to the river restoration. Based on this assumption and the Grand River surveys, we estimate 57,500 to 69,000 annual users for fishing after the restoration is completed.

Visiting users from outside the city of Grand Rapids are assumed to comprise 75 percent of the total usership. It is assumed that 50 percent of these visitors would have visited anyway. This recognizes that the area is already a known fishing destination, while also accounting for the fact that the restoration will create a fishing environment to which more people will be willing to travel.

Local users are assumed to comprise 25 percent of fishing users. We further assume that 95 percent of this local base would have participated in some substitutable form of recreation within the area, thus not providing a net new benefit. This again reflects the current availability of fishing on the Grand River, and elsewhere in the region.

24. Grand Rapids Whitewater Preliminary Plan, November 2013.

After considering user origins and substitution activities, and further assuming that each user will spend three days in the area, we arrive at a total of 66,844 to 80,213 net new user days attributable to fishing recreation.[25]

Shore-Based User Estimates

Lastly, we estimated the expected number of people who will come to the river-front area for other recreational purposes, such as biking or jogging, or simply to enjoy watching the river, attending a river-related event, or enjoying other shore based activities, perhaps while a family member kayaks or fishes. This is a more difficult estimate at which to arrive, given the broad appeal of a river-front setting.

Our estimates are based on the assumption that there will be one to three shore-based user for every one water-based user. This produces an estimate of 100,000 (conservative) to 357,000 (potential) shore-based users. About 25 percent of these users are assumed to be local, and that 35 percent would have stayed in the city, regardless of the restoration project.

A strong visitor draw is also expected, however, as people will accompany white-water users, other boaters, and fishers, and others will come simply to enjoy the views and parks. For the 25 percent who are assumed to be from out-of-the-area, we assume a 75 percent substitution. We also assume an average length-of-stay of two days, which yields a total estimate of 110,000 to 392,700 net-new visitor days from shore-based users.

USER EXPENDITURE ESTIMATES

We used previously completed economic impact studies and general knowledge of the Grand Rapids area to estimate the net-new expenditures that each type of user will make while in the Grand Rapids area. These expenditure estimates reflect expected spending while they are in the area because of the whitewater project's benefits and attractions. Further, the expenditure estimates are only for net-new users. Users who we've assumed to not be net-new, or existing users of the Grand River or a substitute asset in the area, would be assumed to spend less as it would be a more regular activity and closer to home.

Our average daily expenditure estimates, on a per person basis for net new users, are:

1. $100 for whitewater boating users
2. $75 for non-whitewater boating users

25. We assume a larger number of usage days per user for fishing, relative to boating, as the fishing season begins earlier in the spring and extends deeper into the fall. Fishing is also less dependent on weather, and in fact may be aided by rain, cool temperatures, and other factors that would limit boating uses.

3. $125 for fishing users
4. $10 for shore-based users

We've assumed slightly higher spending for whitewater boating users as the group includes more non-local users, and because there will likely be more need for equipment rental relative to non-whitewater use. The net-new fishing users are expected to be drawn for fly fishing opportunities, and research shows that those traveling fly-fishing tend to spend more than those participating in whitewater activities. This may be because anglers tend to be older individuals with higher median incomes than kayakers. Finally, we have assumed a modest $10 daily expenditure average for net-new visitors that are primarily drawn for shoreline activities. These shore-based users are more likely to be from the area, and those that are visiting are assumed to be staying with a boating or fishing user, thus not requiring additional accommodation expenditures and limited other expenditures that would not have been made in the market anyway.

ECONOMIC IMPACTS FROM NET-NEW EXPENDITURES

We used our estimates of net-new visitor days and new expenditures to determine the net economic impacts from the project. Based on our calculations of net-new user days (new visitor days due to people using the river or surrounding parks for different activities), and different spending habits depending on the activity, we arrive at a total of $12.9-$15.5 million in direct new spending.[26] See "Net New Spending Estimates" on page D-4.

This new spending stimulates further spending in the region. To estimate the total net-new demand for goods and services, as well as the number of jobs and the level of wages that are supported by the spending, we apply region and industry-specific RIMS II Regional Multipliers from the U.S. Bureau of Economic Analysis. We adjusted the multipliers to account for only the city of Grand Rapids by finding the ratio of jobs in the city to the two-county region, and increasing the result slightly to account for Grand Rapids having a dense concentration of jobs. We then reduced the regional multipliers by that ratio. In doing so we find that:

1. The total annual economic impact from net new visitor spending is estimated to be $15.8 under the conservative scenario and $19.0 million under the potential scenario.
2. This net-new economic activity will support or create some 80 to 96 jobs within the city, and produce a total of $1.9 to 2.3 million in net new earnings to households in the city.

26. Note that these are current year figures, with no adjustment for inflation.

V. Other Economic Benefits of the Grand River Restoration

The restoration will also generate impacts that are difficult or impossible to accurately project, including health, quality of life, and environmental impacts. These factors improve the city and the region but are often realized over long periods, making them more difficult to see and measure.

OTHER ECONOMIC IMPACTS

Attraction and Retention of Businesses

The restoration of the rapids will draw paddlers from across the state; create opportunities for the city to host competitions; and provide a training course for Olympic athletes. Wausau, Wisconsin has realized economic impacts from hosting international paddling events, and its downtown gains worldwide exposure because competitors and spectators visit from around the globe. The ability to host such events provides a new market opportunity for Grand Rapids and may encourage retailers that supply outdoor recreation equipment to open. Currently, we know of only one other whitewater park in lower Michigan (Petoskey), and a handful in Illinois, Indiana, and Wisconsin. None, however, are of the scale envisioned for Grand Rapids.

The river restoration project will help draw more visitors to downtown Grand Rapids. Not only will these visitors take advantage of the river and adjacent parks, but they will bring business to and increase awareness of restaurants and shops in close proximity to the river. Increased visitation also makes the city conducive to entrepreneurship, since new business owners can have confidence that their establishment will be seen by thousands of people every day. Grand Rapids currently fosters an excellent entrepreneurship community, with several incubators located in the downtown area.

Some visitors may be traveling from several hours away since there are no similar attractions in the region. These visitors are likely stay a night or two at a downtown hotel and spend more on meals than day visitors. Increasing the number of visitors and visitor nights directly benefits the hotels where they stay and retail establishments where they spend money, encouraging downtown business retention. They also benefit the city as a whole by raising the profile of Grand Rapids and helping the city to be more competitive on a regional and state scale.

Improved Land Uses and Fiscal Benefits

Connectivity. Opening up the river to more recreation activities provides an opportunity to increase connectivity throughout the downtown and to adjacent areas. Riverside pathways are a great means of seeing important parts of the city for pedestrians and bicyclists. They also provide alternative methods of

traveling from the downtown areas to nearby neighborhoods while enjoying scenic river views. While there are pathways along the river in downtown Grand Rapids, they are disconnected in some areas. In addition, some portions of pathways lack railings and may be dangerous if used by many pedestrians or anglers at one time. Expanding and enhancing these pathways will encourage increased shore-based usage of the Grand River.

Economic Benefits from New Development. As previously discussed in "River Restoration and Land Uses" on page 17, over 60 percent of parcels adjacent to the Grand River in downtown Grand Rapids are under utilized (41.7 percent low-level utilization, and 20.8 percent mid-level utilization). The river restoration will make the riverfront more attractive and accessible, helping to stimulate new development on river-adjacent parcels.

This new development is most likely to begin with parcels that are currently at a low-use, thus presenting the most upside for new development. Based on our parcel survey, knowledge of recent development trends in Grand Rapids, and the proximity of current low-use parcels to downtown Grand Rapids, we feel it reasonable to anticipate that some 50 percent of low-use parcels (38 of the 75) will shift to a high-use within a decade of the river renovation. As this development takes place the city will benefit from construction expenditures, construction jobs, and the resulting increased taxable values.

To estimate potential construction expenditures and jobs, we reviewed brownfield and building permit data from the City of Grand Rapids Planning Department. We examined project costs for both brownfield projects and from construction projects in which building permits were issued and calculated an average project cost of about $7.5 million. Based on the number of jobs committed to recent brownfield projects, we estimate an average of 40 jobs per project.[27] This yields a total potential investment estimate of $285 million, involving 1,520 jobs, for projects to convert 38 low-use parcels (50 percent of low-use parcels) to higher and better uses.

To estimate the potential increase in property tax base that would accompany the new development we relied current taxable value information for river-adjacent parcels, as is available from the Kent County assessors office. With this data we found the average value per parcel for the current low, medium, and

27. The planning department provided us with a Brownfield Projects Report (2010-2014) and construction cost data from issued building permits, for parcels within 100 feet of the Grand River (2000-2014). The average brownfield project size was $10,308,208 with 37 jobs committed. The average permitted project on or near the river was $5,827,172. Jobs data for these projects was not provided. We further selected specific projects that appeared to best represent the development types that would occur along the riverfront and found the average budget for these was $7,513,486 with 48 jobs. Thus, we have used $7.5 million in costs and 40 jobs as representative averages.

high-use properties. We then calculated the change in overall taxable value that would occur is a given share of properties were upgraded to a higher use.[28]

As shown in Table 3, "Current Estimated Land Values," on page 27, the current average taxable value for low-use properties is $237,023 while the average value for a high-use property is $3.3 million. If 50 percent of the current low-user properties are developed into a high-use with taxable values that align, on average, with current high-use properties, the overall taxable value would increase by nearly $117.8 million (calculated at 38 properties seeing taxable values increase from $237,023 to $3.3 million).

TABLE 3. Current Estimated Land Values

	Total Taxable Value	Parcel Count: Land Units*	Parcel Count: Total Units**	Average Taxable Value per Parcel
Low-Utility	$17,776,726	75	75	$237,023
Mid-Utility	$34,857,290	32	54	$1,089,290
High-Utility	$176,798,634	53	787	$3,335,823
Total	$229,432,650	160	916	

Source: Kent County Property Information System
Analysis: Anderson Economic Group, LLC
**Land Units refers to a property and in most cases on parcel is one land unit. However, several properties in the area contain tens, or even hundreds of unique parcel numbers, primarily in the case of multi-unit residential properties. Each of these is considered a land unit despite consisting of multiple parcel numbers. To determine average parcel value for such instances we used the average of a sample of units and multiplied by the number of units to find the value of the building.*
***All Units refers to each parcel as reported to the Kent County assessor. One building can be comprised of multiple parcels, as each tenant owns or rents a parcel.*

ECOLOGICAL BENEFITS

Flood Control

Because the dams were not originally built for flood control, removing them will not exacerbate the problem. The 6th Street dam was built in 1917 to produce hydroelectricity and the lowhead dams were built for beautification purposes.[29] Removing and modifying the dams will actually help reduce flooding by eliminating areas where debris becomes easily trapped during flood events. Lower water levels will increase the capacity of the channel.[30]

28. In the case of multi-tenant buildings, we took a sample of values from several parcels in each building to provide a representative average value per parcel, then multiplied this by the total number of parcels in the building to approximate the total taxable value of the building on the multi-parcel land unit. We then assumed that high-utility parcels will keep their high-utility use and related value, and that parcels moving to a higher use come to have the current average value of those higher uses.

29. Hanshue, Scott and Amy Harrington, "Special Report: Draft Grand River Assessment," Michigan Department of Natural Resources Fisheries Division, 2011.

Fish Habitats

Dams often have the effect of blocking spawning runs and isolating fish populations, which decreases the overall productivity of the fish community. Aside from blocking fish from their spawning areas, fish can be injured or killed trying to move around dams. The Fish Ladder located at the 6th Street dam prevents these negative effects to an extent, but allowing fish populations to move more freely up and downstream will help restore their numbers to a higher level as well as improve the fishing experience in the river. Downstream from the site of the 6th Street dam, exposed boulders and bedrock formations will recreate fish holding areas. Removing the dams will allow a higher percentage of fish to pass to upstream areas, will help diversify the river's aquatic life by up to five times, and will sustain the game fish populations.[31]

Sea Lamprey Barrier

A sea lamprey adjustable velocity barrier will be constructed between Leonard and Ann Streets to prevent lamprey from traveling farther up the Grand River. This type of barrier exploits the fact that lampreys are poor swimmers by creating an area of very fast-moving water with surfaces to which sea lampreys cannot attach. Fish are able to pass the barrier as they are much stronger swimmers.[32] An effective barrier is an important aspect of the restoration of the Grand River because lamprey are an invasive species, and they prey on native species of the river. Preventing them from spreading upstream will not only help fish species in the Grand River to thrive, it will also strengthen the local fishery.

HEALTH AND SAFETY

Parks and recreation areas present opportunities for physical activity. Exercise helps curb obesity and also can significantly reduce the risk of serious chronic diseases such as cardiovascular disease, high blood pressure, and diabetes. In addition, regular physical activity can reduce the severity of mental health disorders such as depression, anxiety, and panic disorder. Finally, social interaction that often results from physical activity improves energy levels and personal self-esteem.[33] Increasing recreational opportunities in downtown Grand Rapids will be a benefit to public health.

30. Tuthill, Samantha-Rae, "National Dam Removals Revitalize Wildlife, Decrease Flood Risks," AccuWeather.com, March 20, 2013, <http://www.accuweather.com/en/weather-news/national-dam-removals-revitali/8231692>, accessed on December 4, 2013.
31. Hanshue, Scott and Amy Harrington, "Special Report: Draft Grand River Assessment," Michigan Department of Natural Resources Fisheries Division, 2011.
32. Great Lakes Fishery Commission, "Sea Lamprey Barriers: New Technologies Help Solve an Old Problem," <http://www.glfc.org/pubs/FACT_5.pdf>, accessed March 25, 2014.
33. California State Parks, "The Health and Social Benefits of Recreation," California State Parks Planning Division, 2005, pp. 36.

Some social and health benefits associated with urban parks and green spaces are well-studied. A project in Philadelphia involving cleaning up vacant lots and planting gardens correlated with a 90% drop in burglaries and thefts in the surrounding precinct. A study in California showed that the presence of park users is an excellent deterrent of crime, and helps residents feel more safe and secure at home.[34] Park and recreation opportunities also bring neighbors together and encourage a lively community atmosphere. A safe, active environment increases an area's desirability and may encourage further investment in the downtown.

Removing the dams as part of the restoration project will make the river safer for all users. Dangerous water patterns that occur at the base of dams will be eliminated, which will make the river much more safe for all users. The addition of rescue ladders to the existing floodwalls will assist rescue teams in quickly reaching river users who are in trouble and need to be pulled out of the river. Finally, whitewater features that will be created in the river will provide an opportunity for rescue teams and firefighters to train in an active river environment. Grand Rapids could become a training center for rescue teams and firefighters from around the state, since the closest swiftwater rescue training courses are in Indiana and Minnesota.[35] South Bend, Indiana hosts a river rescue training program that has attracted over 2,500 students from across the U.S. and South America to train at its East Race Waterway.

QUALITY OF LIFE

The project has associated educational benefits. Outdoor recreation facilities provide exceptional learning opportunities. In addition, using park and/or recreation areas as a learning center creates a fun atmosphere where students want to participate.[36] Outside of a structured learning environment, the enhanced recreation options presents opportunities for anyone to learn a new sport or activity. As previously mentioned, stand-up paddling is a new sport that is rapidly gaining participants and the more accessible river would provide a place to learn the sport.

The riverfront development project in Detroit, Michigan has initiated positive spin-off aspects for both the riverfront area and the entire city. Anecdotal evidence suggests that the project helped to spur development that may not have

34. California State Parks, "The Health and Social Benefits of Recreation," California State Parks Planning Division, 2005, pp. 23.

35. Indiana River Rescue School, <http://www.indianariverrescue.com/>, accessed on November 15, 2013 and University of Minnesota Duluth Recreational Sports Outdoor Program, <http://www.umdrsop.org/(RSOP%20Web)/Kayak_&_Canoe/infosheets_sm12/WW%20canoe%20pdfs%202012/2012SwiftwaterRescueInfo.pdf>, accessed on November 15, 2013.

36. California State Parks, "The Health and Social Benefits of Recreation," California State Parks Planning Division, 2005, pp. 32.

otherwise taken place, and that the riverfront has transformed perceptions of Detroit among residents and non-locals alike. Further, the riverfront is a desirable space for workers, supporting a strong rental structure for properties close to the river.[37] Riverfront restoration and accompanying development has the potential to affect the entire city and region in unexpected ways.

Overall, restoring the river in downtown Grand Rapids provides countless benefits and opportunities to residents and visitors. Increasing the types of river-based recreation available of which residents and visitors can take advantage, such as kayaking, canoeing, rafting, and fishing contributes to their health and well-being. It encourages people to participate in new activities and build relationships with a new network of participants. It also helps diversify the local economy by providing another reason for visitors to come to Grand Rapids and another sector in which they can spend tourism dollars. Restoring the river will also improve the quality of life for residents by providing a place for entertainment and relaxation.

37. CSL International, "Economic Impact Study: Detroit Riverfront 2013," Detroit Riverfront Conservancy, 2013, pp. 14.

Appendix A. Market Area Data

Appendix A contains:

Table 1, "Market Demographic Report," on page A-2.

Table 2, "Business and Employment," on page A-4.

TABLE 1. Market Demographic Report

	Downtown Grand Rapids			City of Grand Rapids			Grand Rapids Region		
Population	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**
Total Population	41,800	43,008	2.9%	189,416	194,002	2.4%	876,463	902,663	3.0%
Total Households	17,324	17,823	2.9%	73,001	75,030	2.8%	326,047	337,016	3.4%
Average Household Size	2.4	2.4	0.0%	2.5	2.5	-0.4%	2.6	2.6	-0.4%
Population in Group Quarters	1,064	-	-	7,980	-	-	19,614	-	-
Age	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**
Median Age	28.5	29.4	3.2%	31.7	32.8	3.5%	34.8	35.6	2.3%
Population: Under 20	10,990	11,167	1.6%	53,549	54,875	2.5%	250,693	253,675	1.2%
Population: Age 20-24	6,085	5,590	-8.1%	18,442	16,804	-8.9%	69,707	65,073	-6.6%
Population: Age 25-29	5,431	5,418	-0.2%	17,378	16,540	-4.8%	61,234	63,686	4.0%
Population: Age 30-34	3,873	4,191	8.2%	15,303	15,647	2.2%	58,385	61,537	5.4%
Population: Age 35-39	2,640	3,054	15.7%	11,934	13,615	14.1%	52,408	59,250	13.1%
Population: Age 40-44	2,400	2,348	-2.2%	10,749	10,882	1.2%	55,104	52,655	-4.4%
Population: Age 45-49	2,232	2,231	0.0%	10,265	10,239	-0.3%	57,366	54,704	-4.6%
Population: Age 50-54	2,361	2,270	-3.9%	10,988	10,169	-7.5%	61,727	56,800	-8.0%
Population: Age 55-59	1,992	2,172	9.0%	10,452	10,589	1.3%	56,939	59,150	3.9%
Population: Age 60-64	1,436	1,626	13.2%	8,646	9,462	9.4%	47,211	52,449	11.1%
Population: Age 65+	2,361	2,940	24.5%	21,711	25,179	16.0%	105,689	123,684	17.0%
% of Population: Under 20	26.3%	26.0%	-1.2%	28.3%	28.3%	0.1%	28.6%	28.1%	-1.7%
% of Population: Age 65+	5.6%	6.8%	21.0%	11.5%	13.0%	13.2%	12.1%	13.7%	13.6%
Ethnicity And Race	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**
White / Caucasian	27,328	27,321	0.0%	120,698	120,871	0.1%	721,629	732,275	1.5%
Black / African American	6,667	6,876	3.1%	39,752	41,072	3.3%	64,551	69,081	7.0%
Asian, American Indian, and Pacific	981	1,031	5.1%	5,184	5,511	6.3%	26,554	29,096	9.6%
Other or More Than One Race	6,825	7,781	14.0%	23,781	26,548	11.6%	63,729	72,211	13.3%
Hispanic Ethnicity (any race)	8,923	10,270	15.1%	31,175	34,935	12.1%	87,257	99,400	13.9%
% White / Caucasian	65.4%	63.5%	-2.8%	63.7%	62.3%	-2.2%	82.3%	81.1%	-1.5%
% Black / African American	15.9%	16.0%	0.2%	21.0%	21.2%	0.9%	7.4%	7.7%	3.9%
% Asian, American Indian, and Pacific	2.3%	2.4%	2.1%	2.7%	2.8%	3.8%	3.0%	3.2%	6.4%
% Other or More Than One Race	16.3%	18.1%	10.8%	12.6%	13.7%	9.0%	7.3%	8.0%	10.0%
% Hispanic Ethnicity (any race)	21.3%	23.9%	11.9%	16.5%	18.0%	9.4%	10.0%	11.0%	10.6%

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TABLE CONTINUED.

	Downtown Grand Rapids			City of Grand Rapids			Grand Rapids Region		
Incomes	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**
Per Capita Income	$16,452	$18,955	15.2%	$19,021	$22,062	16.0%	$24,375	$28,379	16.4%
Median Household Income	$28,201	$31,280	10.9%	$36,000	$42,099	16.9%	$49,405	$58,000	17.4%
Households w/Inc $14,999 and Below	4,705	4,824	2.5%	14,668	14,757	0.6%	40,028	38,862	-2.9%
Households w/Inc $15,000 - $24,999	2,909	2,354	-19.1%	11,217	8,581	-23.5%	38,628	27,947	-27.7%
Households w/Inc $25,000 - $34,999	2,652	2,494	-6.0%	9,560	8,647	-9.6%	36,930	31,386	-15.0%
Households w/Inc $35,000 - $49,999	2,797	2,543	-9.1%	11,382	10,040	-11.8%	48,876	41,447	-15.2%
Households w/Inc $50,000 - $74,999	2,560	2,899	13.2%	13,746	14,628	6.4%	68,432	69,233	1.2%
Households w/Inc $75,000 - $99,999	857	1,412	64.8%	6,181	9,389	51.9%	39,725	56,781	42.9%
Households w/Inc $100,000 - $149,999	487	814	67.1%	4,436	6,625	49.3%	35,127	49,185	40.0%
Households w/ Inc $150,000 - $199,999	224	311	38.8%	1,018	1,377	35.3%	9,992	12,425	24.3%
Households w/Inc $200,000 and Above	133	173	30.1%	794	987	24.3%	8,309	9,750	17.3%
Households w/Inc $14,999 and Below	27.2%	27.1%	-0.3%	20.1%	19.7%	-2.1%	12.3%	11.5%	-6.1%
Households w/Inc $15,000 - $24,999	16.8%	13.2%	-21.3%	15.4%	11.4%	-25.6%	11.8%	8.3%	-30.0%
Households w/Inc $25,000 - $34,999	15.3%	14.0%	-8.6%	13.1%	11.5%	-12.0%	11.3%	9.3%	-17.8%
Households w/Inc $35,000 - $49,999	16.1%	14.3%	-11.6%	15.6%	13.4%	-14.2%	15.0%	12.3%	-18.0%
Households w/Inc $50,000 - $74,999	14.8%	16.3%	10.1%	18.8%	19.5%	3.5%	21.0%	20.5%	-2.1%
Households w/Inc $75,000 - $99,999	4.9%	7.9%	60.1%	8.5%	12.5%	47.8%	12.2%	16.8%	38.3%
Households w/Inc $100,000 - $149,999	2.8%	4.6%	62.5%	6.1%	8.8%	45.3%	10.8%	14.6%	35.5%
Households w/ Inc $150,000 - $199,999	1.3%	1.7%	34.9%	1.4%	1.8%	31.6%	3.1%	3.7%	20.3%
Households w/Inc $200,000 and Above	0.8%	1.0%	26.4%	1.1%	1.3%	20.9%	2.5%	2.9%	13.5%
Housing Unit Growth & Occupancy	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**	**2013**	**2018**	**% Chg**
Total Housing Units	20,034	20,342	1.5%	80,944	82,604	2.1%	353,966	363,322	2.6%
% Owner Occupied Housing Units	30.4%	31.3%	3.1%	49.5%	50.4%	1.7%	65.6%	66.6%	1.5%
% Renter Occupied Housing Units	56.1%	56.3%	0.4%	40.6%	40.4%	-0.5%	26.5%	26.2%	-1.3%
% Vacant Housing Units	13.5%	12.4%	-8.5%	9.8%	9.2%	-6.6%	7.9%	7.2%	-8.2%

Source: Esri, Inc
Analysis: Anderson Economic Group, LLC

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TABLE 2. Business and Employment

	Downtown Grand Rapids			City of Grand Rapids			Grand Rapids Region		
Jobs by Industry Sector	**2005**	**2011**	**% Chg**	**2005**	**2011**	**% Chg**	**2005**	**2011**	**% Chg**
Total Jobs	66,817	71,092	6.4%	131,215	125,130	-4.6%	458,413	439,599	-4.1%
Agriculture, Forestry, Fishing and Hunting	17	44	158.8%	258	150	-41.9%	5,216	5,235	0.4%
Mining, Quarrying, and Oil and Gas Extraction	21	34	61.9%	42	38	-9.5%	229	147	-35.8%
Utilities	277	251	-9.4%	278	253	-9.0%	1,061	984	-7.3%
Construction	1,174	930	-20.8%	3,587	2,516	-29.9%	21,047	14,518	-31.0%
Manufacturing	10,751	8,316	-22.6%	22,293	15,664	-29.7%	107,005	90,047	-15.8%
Wholesale Trade	1,508	1,712	13.5%	6,544	4,800	-26.7%	27,873	27,107	-2.7%
Retail Trade	2,010	1,475	-26.6%	9,162	7,730	-15.6%	49,780	42,312	-15.0%
Transportation and Warehousing	552	706	27.9%	1,300	1,469	13.0%	9,401	10,975	16.7%
Information	1,960	1,268	-35.3%	3,032	2,132	-29.7%	6,667	4,795	-28.1%
Finance and Insurance	2,985	2,154	-27.8%	6,108	4,692	-23.2%	16,251	15,722	-3.3%
Real Estate and Rental and Leasing	569	1,077	89.3%	1,227	1,752	42.8%	4,759	4,596	-3.4%
Professional, Scientific, and Technical Services	4,311	4,830	12.0%	6,462	6,395	-1.0%	18,964	18,247	-3.8%
Management of Companies and Enterprises	430	53	-87.7%	600	186	-69.0%	5,333	5,218	-2.2%
Administration & Support, Waste Management and Remediation	2,536	4,788	88.8%	4,857	11,747	141.9%	29,600	41,302	39.5%
Educational Services	8,169	6,954	-14.9%	14,652	11,588	-20.9%	39,035	36,675	-6.0%
Health Care and Social Assistance	18,187	24,716	35.9%	30,655	35,396	15.5%	51,988	62,511	20.2%
Arts, Entertainment, and Recreation	394	670	70.1%	883	1,110	25.7%	4,670	4,388	-6.0%
Accommodation and Food Services	3,995	4,225	5.8%	9,606	8,491	-11.6%	35,123	30,469	-13.3%
Other Services (excluding Public Administration)	2,084	2,113	1.4%	4,613	4,056	-12.1%	14,657	14,599	-0.4%
Public Administration	4,887	4,776	-2.3%	5,056	4,965	-1.8%	9,754	9,752	0.0%

	Downtown Grand Rapids			City of Grand Rapids			Grand Rapids Region		
Inflow (+) and Outflow (-)	**2005**	**2011**	**% Chg**	**2005**	**2011**	**% Chg**	**2005**	**2011**	**% Chg**
Employed in the Selection Area	66,817	71,092	6.4%	131,215	125,130	-4.6%	458,413	439,599	-4.1%
Living in the Selection Area	17,904	15,714	-12.2%	86,054	72,827	-15.4%	391,959	384,789	-1.8%
Net Job Inflow (+) or Outflow (-)	48,913	55,378	13.2%	45,161	52,303	15.8%	66,454	54,810	-17.5%
Where Workers Live	**2005**	**2011**	**% Chg**	**2005**	**2011**	**% Chg**	**2005**	**2011**	**% Chg**
Kent County, MI	47,387	46,899	-1.0%	89,969	79,879	-11.2%	228,872	209,765	-8.3%
Ottawa County, MI	6,391	8,899	39.2%	11,989	14,075	17.4%	96,709	93,366	-3.5%
Allegan County, MI	1,497	1,824	21.8%	2,916	3,309	13.5%	20,867	20,962	0.5%
Muskegon County, MI	1,607	1,661	3.4%	3,026	3,102	2.5%	19,367	18,210	-6.0%
Montcalm County, MI	871	1,095	25.7%	1,980	2,049	3.5%	6,863	6,901	0.6%
Newaygo County, MI	869	999	15.0%	1,779	1,785	0.3%	6,209	5,827	-6.2%
Ionia County, MI	884	975	10.3%	1,889	1,889	0.0%	7,745	7,576	-2.2%
Barry County, MI	939	944	0.5%	1,791	1,750	-2.3%	6,734	7,189	6.8%
Wayne County	618	787	27.3%	1,399	2,381	70.2%	5,405	7,145	32.2%
All Other Counties	5,754	7,009	21.8%	14,477	14,911	3.0%	59,642	62,658	5.1%

Source: U.S. Census Bureau Center for Economic Studies
Analysis: Anderson Economic Group, LLC

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Appendix B. Project Area Maps

Appendix B contains:

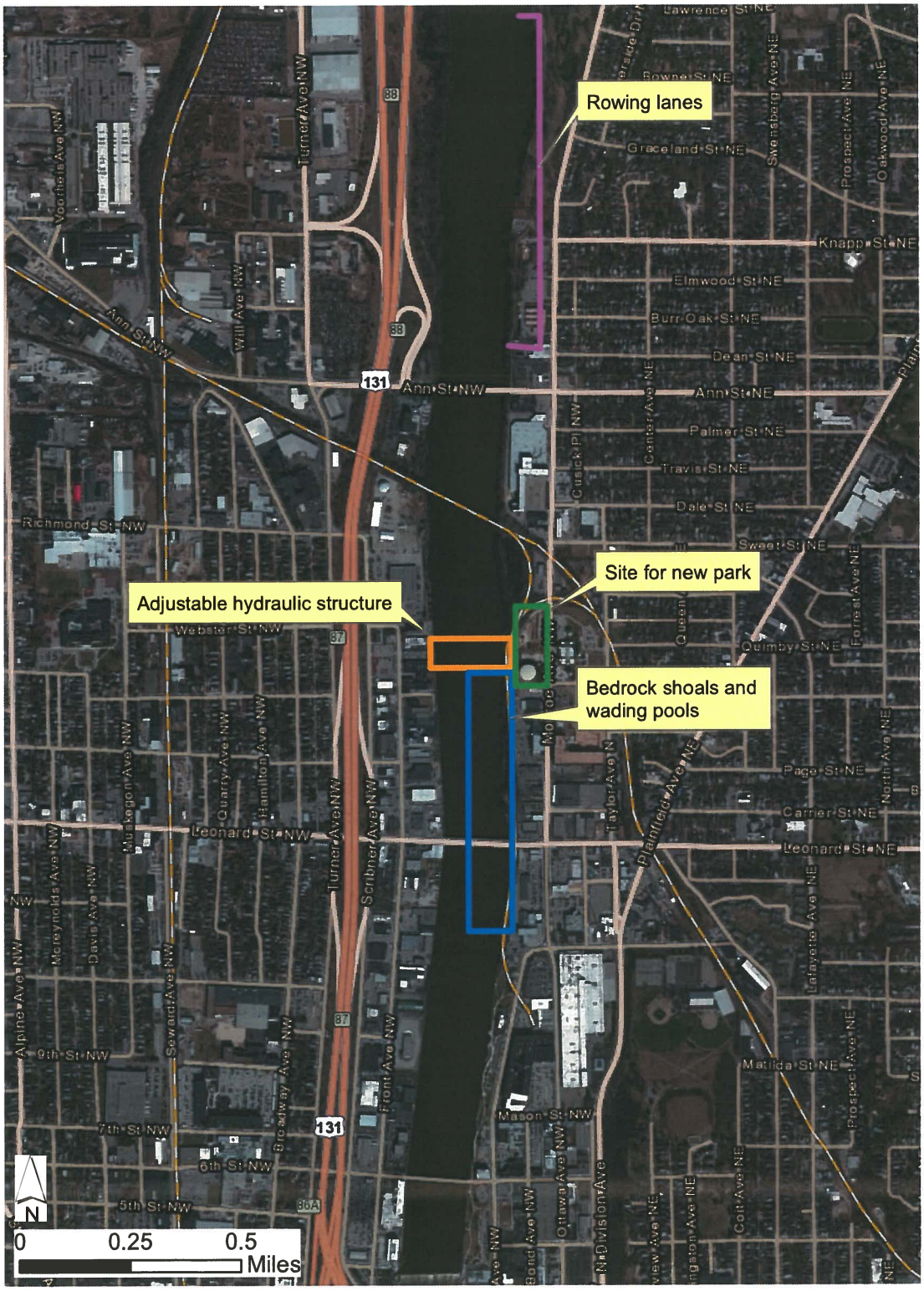
Map 1, "Overview of Project Area, North of 6th Street," on page B-2.

Map 2, "Overview of the Project Area, South of 6th Street," on page B-3.

Map 3, "Highest and Best Use Assessment," on page B-4.

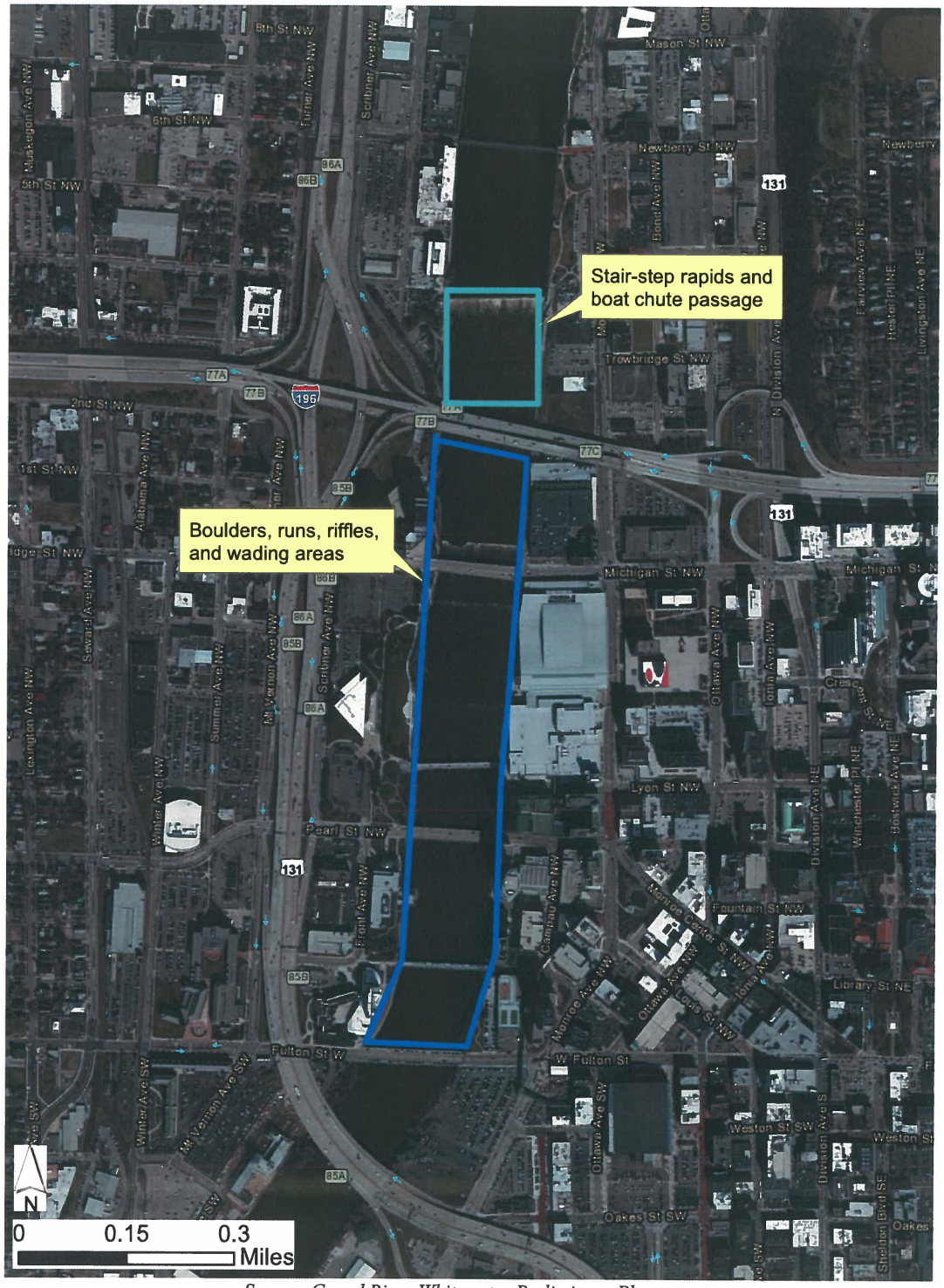
Map 4, "Overview of Downtown Colleges, Museums, and Event Centers," on page B-5.

MAP 1. Overview of Project Area, North of 6th Street



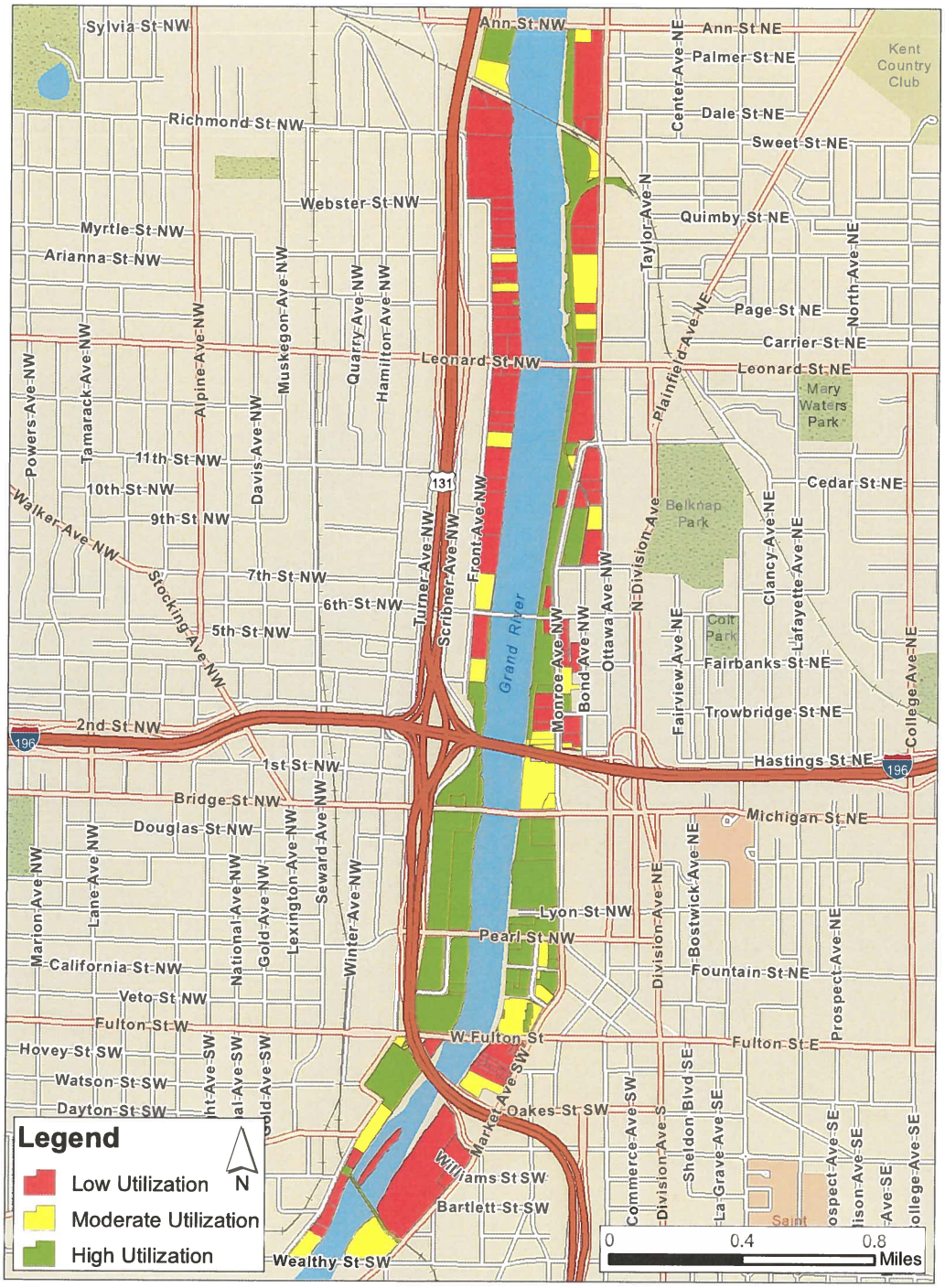
Source: Grand Rapids Whitewater Preliminary Plan

MAP 2. Overview of the Project Area, South of 6th Street



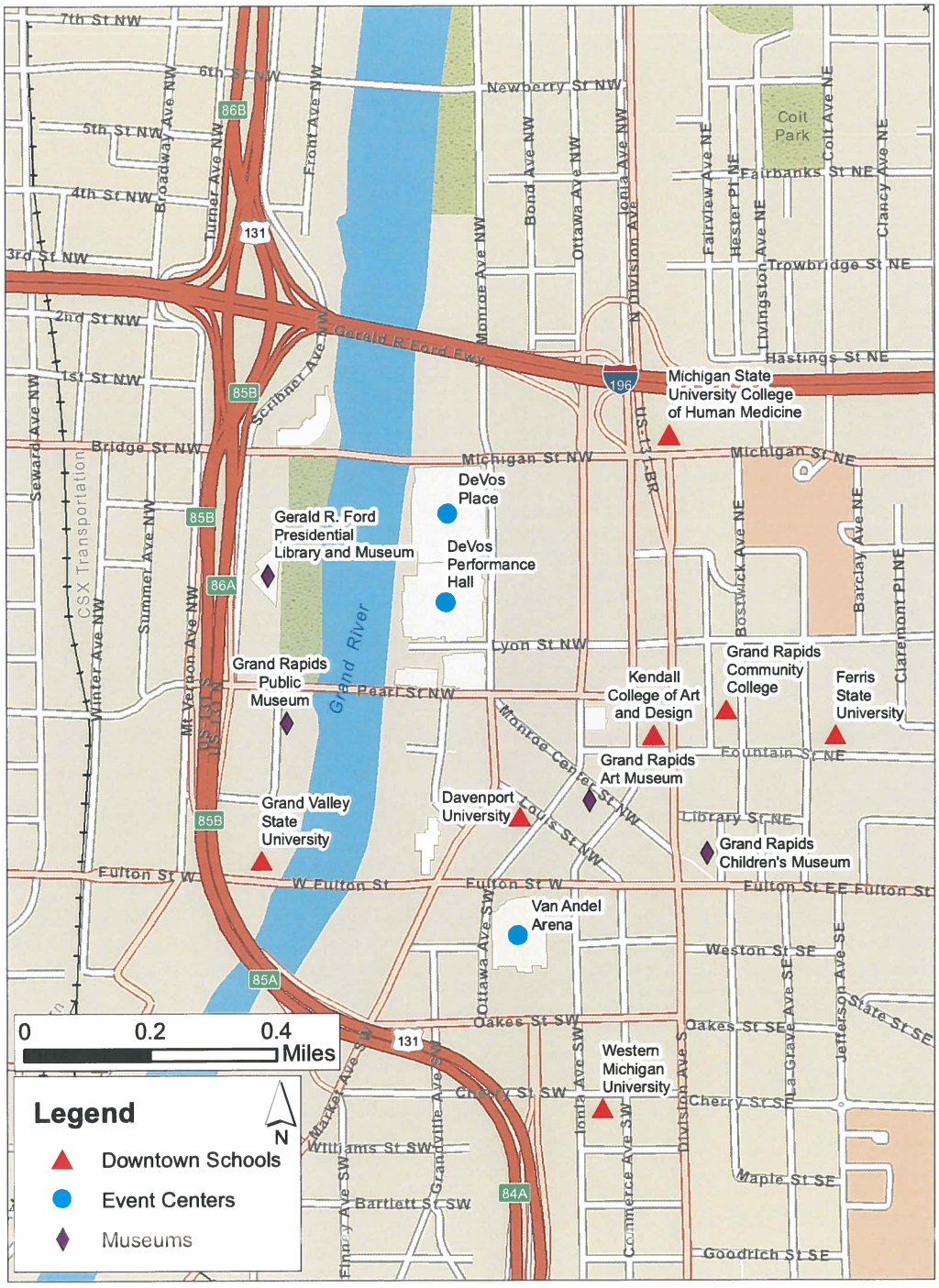
Source: Grand River Whitewater Preliminary Plan

MAP 3. Highest and Best Use Assessment



Source: Kent County Property Information System
Analysis: Anderson Economic Group, LLC

MAP 4. Overview of Downtown Colleges, Museums, and Event Centers



Appendix C. Riverfront Parcels

This Appendix contains:

Table 1, "Inventory of Riverfront Parcels," on page C-2.

Map 7, "Ann Street to Coldbrook Street," on page C-6.

Map 8, "Coldbrook Street to Lyon Street," on page C-7.

Map 9, "Lyon Street to Wealthy Street," on page C-8.

TABLE 1. Inventory of Riverfront Parcels

Parcel Number	Address	Property Class	Zoning Designation	Landmark	Total Acreage	Land Utilization
411313252001	304 ANN ST NW	201	TCC	Parking lot	0.05	Mid
411313252004	280 ANN ST NW	201	TCC	For-rent office bldg	2.52	Mid
411313252005	270 ANN ST NW	201	TCC	Radisson Hotel	3.23	High
411313254001	1632 TURNER AVE NW	702	TCC	Kent County Road Commission building	0.94	Low
411313254002	1660 TURNER AVE NW	702	TCC	Kent County Road Commission building	0.86	Low
411313254003	1600 TURNER AVE NW	701	TCC	Kent County Road Commission building	3.89	Low
411313276001	150 ANN ST NW	201	TCC	Grand Rapids Family Credit Union	0.65	Mid
411313276005	1615 MONROE AVE NW	201	TCC	1-story commercial building	0.99	Low
411313276007	60 ANN ST NW	702	TCC	City-owned open space	0.56	High
411313276008	1661 MONROE AVE NW	301	TCC	Baker Furniture	7.28	Low
411313403001	1500 SCRIBNER AVE NW	701	TCC	Kent County Road Commission building	8.62	Low
411313403008	1440 FRONT AVE NW	301	TCC	Rose Technologies	0.78	Low
411313403009	1420 FRONT AVE NW	701	TCC	Transportation Depot	1.28	Low
411313403010	1450 FRONT AVE NW	201	TCC	Hooker Glass	0.77	Low
411313403011	1400 FRONT AVE NW	201	TCC	P&F Supply Co.	0.92	Low
411313426002	1499 MONROE AVE NW	702	TCC	City-owned open space	1.36	High
411313427001	1535 MONROE AVE NW	701	TCC	Creston VFW Hall	0.62	Mid
411313427001	1535 MONROE AVE NW	701	TCC	Creston VFW Hall	0.05	Mid
411313427001	1535 MONROE AVE NW	701	TCC	Creston VFW Hall	0.17	Mid
411313455001	1348 FRONT AVE NW	201	TCC	Property Management/Office Furniture	0.62	Mid
411313455005	1310 FRONT AVE NW	201	TCC	Silas Distributors	0.70	Mid
411313455007	1262 FRONT AVE NW	302	TCC	Electricity Tower	0.08	High
411313455009	1240 FRONT AVE NW	701	TCC	MDOT Facility	1.49	Low
411313455011	265 LEONARD ST NW	201	TCC	Sullivan Dental Products	1.05	Low
411313455012	1340 FRONT AVE NW	201	TCC	Warmington Industries	0.54	Low
411313455014	281 LEONARD ST NW	201	TCC	Grand Rapids Building Services	1.08	Low
411313455015	1300 FRONT AVE NW	201	TCC	Motown Automotive Distributing	1.01	Low
411313455016	1250 FRONT AVE NW	201	TCC	Kimbow, Inc.	1.06	Low
411313455017	1336 FRONT AVE NW	201	TCC	Warmington Industries	0.98	Low
411313455018	1320 FRONT AVE NW	201	TCC	For-sale commercial building	0.19	Low
411313476001	1501 MONROE AVE NW	701	TCC	City-owned road supply	2.63	Low
411313476002	1401 MONROE AVE NW	702	TCC	City-owned road supply	1.58	Low
411313476003	1375 MONROE AVE NW	301	TCC	City water	0.67	Low
411313476006	1305 MONROE AVE NW	201	TCC	T&S Concepts	0.69	Low
411313476007	1247 MONROE AVE NW	201	TCC	Tillmans Restaurant	0.95	Mid
411313476008	1225 MONROE AVE NW	301	TCC	Open space; access road	0.32	High
411313476009	1223 MONROE AVE NW	301	TCC	Electricity Grid	0.55	High
411313476010	1221 MONROE AVE NW	201	TCC	Train Out Pain Chiropractic	0.34	Low
411313476013	1201 MONROE AVE NW	201	TCC	Family Dollar	0.73	Low
411313476014	1345 MONROE AVE NW	201	TCC	Cooper's Landing	3.57	Mid
411313502011	1529 MONROE AVE NW	702	TCC	DNR-owned land	9.49	High
411324202002	260 LEONARD ST NW	201	TCC	Micro Visions	0.59	Low
411324202007	954 FRONT AVE NW	201	TCC	Young Supply Co.	1.03	Low
411324202018	936 FRONT AVE NW	201	TCC	Ryder Transportation	3.01	Low
411324202020	1116 FRONT AVE NW	201	TCC	Creston Industrial Sales and Trane Heating & Cooling	3.23	Low
411324202021	282 LEONARD ST NW	201	TCC	Recovery Academy	0.31	Low
411324202022	1060 FRONT AVE NW	201	TCC	SF Supply warehouse	0.96	Low
411324202023	1054 FRONT AVE NW	201	TCC	Verhey Motor Coach Co.	0.61	Low
411324202024	1010 FRONT AVE NW	201	TCC	Great Lakes EMS Academy	1.19	Mid
411324202025	974 FRONT AVE NW	201	TCC	Grand River Interiors and BETA Design	2.28	Low

TABLE CONTINUED.

Parcel Number	Address	Property Class	Zoning Designation	Landmark	Total Acreage	Land Utilization
411324202026	750 FRONT AVE NW	201	TCC	Riverwalk and EPS Inc.	2.02	Mid
411324202027	748 FRONT AVE NW	701	TCC	City-owned open space	0.10	High
411324202029	830 FRONT AVE NW	301	TCC	Wolverine Coil Spring Co.	2.44	Low
411324226003	1101 MONROE AVE NW	701	TCC	City Water	3.61	Low
411324226004	1055 MONROE AVE NW	701	TCC	City-owned power	0.38	High
411324226005	1051 MONROE AVE NW	701	TCC	City-owned parking lot	0.07	Low
411324226006	1045 MONROE AVE NW	702	TCC	City-owned park buildings	0.28	Mid
411324226007	1179 MONROE AVE NW	701	TCC	Monroe Avenue Fire Station	0.49	Low
411324226008	1165 MONROE AVE NW	701	TCC	City Water	0.92	Low
411324230006	100 COLDBROOK ST NW	301	TCC	Parking lot	1.78	Low
411324230007	1021 OTTAWA AVE NW	301	TCC	Warehouse	0.64	Low
411324230010	1009 OTTAWA AVE NW	301	TCC	Bend Tooling	0.63	Low
411324276003	1001 MONROE AVE NW	201		City Water	0.52	Low
411324276012	905 MONROE AVE NW	702	SD-OS	Canal Street Park	4.41	High
411324277010	901 OTTAWA AVE NW	201	CC	Parking lot	1.97	Low
411324277015	1012 MONROE AVE NW	201	TCC	Parking lot	0.91	Low
411324277016	910 MONROE AVE NW	202	CC	Open space	0.09	High
411324404006	600 FRONT AVE NW	701	SD-OS	City-owned parking lot	0.10	High
411324404014	280 SIXTH ST NW	702	SD-OS	City-owned open space	0.30	High
411324404017	678 FRONT AVE NW	201	TCC	MI Virtual Charter Academy, Aflac, K Group offices	2.12	Low
411324404018	634 FRONT AVE NW	201	TCC	Plante Moran	1.17	Mid
411324404019	624 FRONT AVE NW	701	SD-OS	Electricity Tower	2.23	High
411324426005	851 MONROE AVE NW	202	CC	Parking lot	0.54	Low
411324431009	601 MONROE AVE NW	701	CC	Parking lot	0.87	Low
411324431011	555 MONROE AVE NW	701	CC	Parking lot	0.93	Low
411324431012	533 MONROE AVE NW	701	CC	Parking lot	0.59	Low
411324431013	525 MONROE AVE NW	702	CC	County-owned open land	0.62	Mid
411324431014	519 MONROE AVE NW	701	CC	County-owned open land	0.39	Mid
411324431015	511 MONROE AVE NW	701	CC	County-owned open land	0.28	Mid
411324431017	623 MONROE AVE NW	301	CC	Electricity Grid	0.49	High
411324431018	745 MONROE AVE NW	201	CC	Parking lot	0.39	Low
411324431019	647 MONROE AVE NW	701	SD-OS	6th Street Bridge Park	4.24	High
411324432001	748 MONROE AVE NW	201	CC	Future Embassy Suites	0.23	Low
411324432002	720 MONROE AVE NW	201	CC	Future Embassy Suites	0.57	Low
411324432003	710 MONROE AVE NW	201	CC	Future Embassy Suites	0.11	Low
411324432014	701 BOND AVE NW	301	CC	Parking lot	1.16	Low
411324451015	333 BRIDGE ST NW	201	CC	Bridgewater Place	3.31	High
411324452018	271 BRIDGE ST NW	702	SD-OS	City-owned open space	0.72	High
411324476001	544 MONROE AVE NW	701	CC	Parking lot	1.01	Low
411324476002	520 MONROE AVE NW	701	CC	County-owned parking lot	0.62	Low
411324476003	516 MONROE AVE NW	201	CC	Quality Auto	0.25	Mid
411324476004	510 MONROE AVE NW	701	CC	Parking lot	0.09	Low
411324480001	225 MICHIGAN ST NW	701	CC	Post Office	4.43	Mid
411324480002	201 MICHIGAN ST NW	201	CC	7-8 story brick building	0.50	Mid
411324502007	1035 MONROE AVE NW	702	TCC	Power lines	1.20	High
411325201010	303 PEARL ST NW	701	CC	Gerald R. Ford Presidential Museum	8.59	High
411325205010	220 FRONT AVE NW	701	SD-OS	Ah-Nab-Awen Park	6.78	High
411325207020	333 MONROE AVE #1 NW	701	CC	DeVos Place	1.99	High
411325207023	303 MONROE AVE NW	701	CC	DeVos Place	2.91	High
411325207024	245 MONROE AVE NW	701	CC	DeVos Performance Hall	6.78	High
411325226004	201 MONROE AVE NW	201	CC	Reserve Wine & Food	0.09	High
411325251011	310 PEARL ST NW	201	CC	Holiday Inn	3.55	High
411325253004	305 FULTON ST W	701	CC	Grand Valley State University building	4.79	High
411325254004	60 FRONT AVE NW	701	CC	GVSU-owned open space	0.46	High
411325254005	272 PEARL ST NW	701	CC	Grand Rapids Public Museum	2.57	High

TABLE CONTINUED.

Parcel Number	Address	Property Class	Zoning Designation	Landmark	Total Acreage	Land Utilization
411325256001	220 LYON ST NW	201	CC	Grand Plaza building	0.63	High
411325257012	251 LOUIS CAMPAU PROM NW	702	CC	DDA-owned open space	0.04	High
411325257014	235 LOUIS ST NW	201	CC	JW Marriott	1.51	High
411325258012	85 CAMPAU AVE NW	201	CC	Riverfront Plaza offices	0.60	High
411325260012	50 CAMPAU AVE NW	701	CC	City-owned	0.03	High
411325260013	289 FULTON ST W	701	CC	City-owned open space; walking path	0.06	High
411325260014	291 FULTON ST W	701	CC	City-owned open space; walking path	0.06	High
411325280021	218 PEARL ST NW	201	CC	Amway parking structure	0.79	Mid
411325284008	43 MONROE AVE NW	701	CC	City-owned parking structure	0.63	Mid
411325284010	99 MONROE AVE NW	201	CC	Comerica Bank	1.08	High
411325330001	346 FULTON ST W	702	TCC	Gas station	0.27	Mid
411325330008	29 FRONT AVE SW	201	TCC	Billboard	0.05	Mid
411325330009	50 FRONT AVE NW	701	TCC	GVSU-owned parking	6.43	High
411325333004	417 WATSON ST SW	701	CC	GVSU-owned parking	0.69	Low
411325334011	210 FRONT AVE SW	201	TCC	Feyen Zylstra	0.65	Low
411325334014	140 FRONT AVE SW	201	TCC	Grand River Aseptic Manufacturing	2.09	Mid
411325378004	312 FRONT AVE SW	201	TCC	Airgas Dry Ice	0.47	Low
411325378005	322 FRONT AVE SW	201	TCC	Exodus Place	1.48	Mid
411325378006	240 FRONT AVE SW	201	TCC	Commercial, multiple occupants	1.01	Low
411325378008	300 FRONT AVE SW	201	TCC	For sale/vacant property	0.86	Low
411325379007	353 MARKET AVE SW	701	CC	City-owned parking lot	0.07	Low
411325379009	301 MARKET AVE SW	701	CC	City-owned warehouses; Punk Island	16.35	Low
411325382006	509 WEALTHY ST SW	701	CC	Grand Rapids Traffic Signals	4.30	Mid
411325401001	216 FULTON ST W	201	CC	Amway-owned parking	0.17	Low
411325401006	45 MARKET AVE SW	201	CC	Amway-owned parking	0.14	Low
411325401011	3 MARKET AVE SW	201	CC	Amway-owned parking	0.24	Low
411325401012	17 MARKET AVE SW	201	CC	Amway-owned parking	0.10	Low
411325401013	21 MARKET AVE SW	201	CC	Amway-owned parking	1.78	Low
411325401014	37 MARKET AVE SW	201	CC	Amway-owned parking	0.49	Low
411325401015	41 MARKET AVE SW	201	CC	Amway-owned parking	0.37	Low
411325401016	47 MARKET AVE SW	201	CC	Amway-owned parking	0.51	Low
411325401017	53 MARKET AVE SW	201	CC	Amway-owned parking	0.90	Low
411325401019	63 MARKET AVE SW	201	CC	Charley's Crab	1.91	Mid
411325451001	201 MARKET AVE SW	701	CC	City of Grand Rapids Building Authority	1.72	Low
411325451002	225 MARKET AVE SW	701	CC	City-owned parking lot	0.17	Low
411325455005	233 MARKET AVE SW	701	CC	City building	0.68	Low
411325501007	242 FRONT AVE SW	301	TCC	Railroad	0.67	High
411325501014	355 MARKET AVE SW	701	CC	Railroad	0.32	High
411325501015	357 MARKET AVE SW	701	CC	Railroad	0.04	High
411325503008	58 FRONT AVE NW	701	CC	DDA-owned, street	0.15	High
411324284001-411324284004	975 OTTAWA AVE NW	201	CC	For-rent commercial building	1.06	Mid
411324285001-411324285283	940 MONROE AVE NW	201, 401	CC	Commercial on ground, residential units above	2.88	High
411324439001-411324439012	648 MONROE AVE NW	201	CC	Brass Works Building	1.03	Mid
411324440029-411324440068	600 MONROE AVE NW	201	CC	CSM Group, residential units above	0.50	High
411324441001-411324441027	801 MONROE AVE NW	201, 401	CC	Commercial and residential brick building	0.23	High
411324453001-411324453210	335 BRIDGE ST NW	401	CC	Riverhouse Condos	0.51	High
411325259016-411325259027	55 CAMPAU AVE NW	201	CC	Riverfront Plaza building	0.69	High

TABLE CONTINUED.

Parcel Number	Address	Property Class	Zoning Designation	Landmark	Total Acreage	Land Utilization
411325262001-411325262022	252 PEARL ST NW (includes 250 PEARL ST NW)	201	CC	Forslund Condos	0.37	High
411325263008-411325263012	FULTON ST W (includes 11 MONROE AVE NW)	201	CC	Commerical uses and parking toward river	3.31	Mid
411325264001-411325264153	CAMPAU CIR NW (includes 10-158 CAMPAU CIR NW)	401	CC	JW Marriott and condos	0.55	High
411325265001-411325265002	75 CAMPAU AVE NW	201	CC	JW Marriott parking	0.63	High
411325276022-411325276039	PEARL ST NW (includes 225-259 PEARL ST)	201	CC	Amway Hotel	2.13	High
411325284011-411325284015	168 LOUIS CAMPAU PROM NW	201	CC	Z's Bar and Restaurant; party store	0.09	Mid
411325297001-411325297003	MONROE AVE NW (includes 161-169 MONROE AVE NW)	201	CC	Mlive, Founders Bank	0.31	High
411325298001-411325298002	171 MONROE AVE NW	201	CC	PNC Bank	0.46	High

Source: Kent County; City of Grand Rapids; Google Maps; Anderson Economic Group, LLC

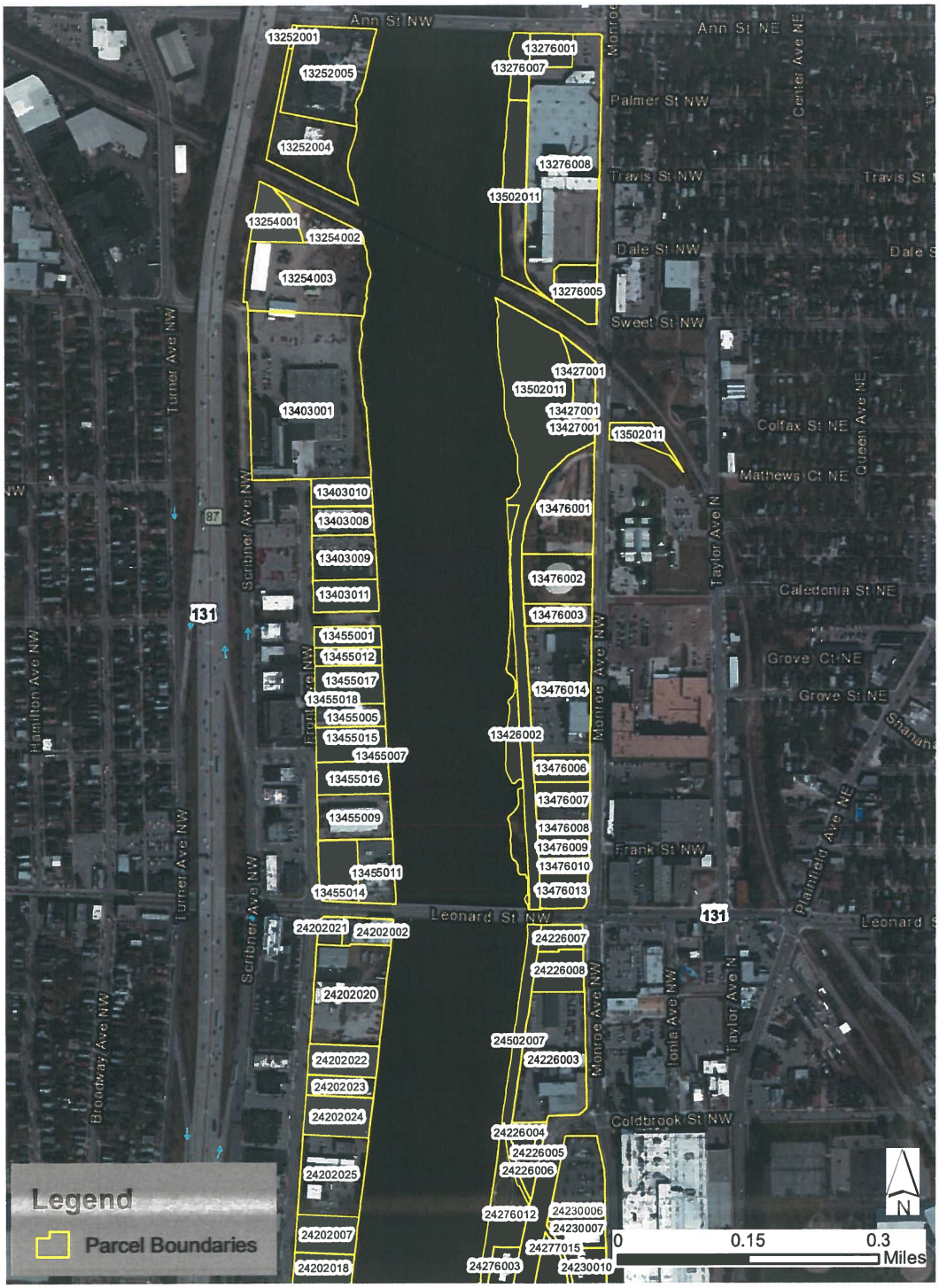
Note: Property classes are defined as follows:

- *201: Commercial Improved*
- *202: Commercial Vacant*
- *301: Industrial Improved*
- *302: Industrial Vacant*
- *401: Residential Improved*
- *701: Exempt Improved*
- *702: Exempt Vacant*

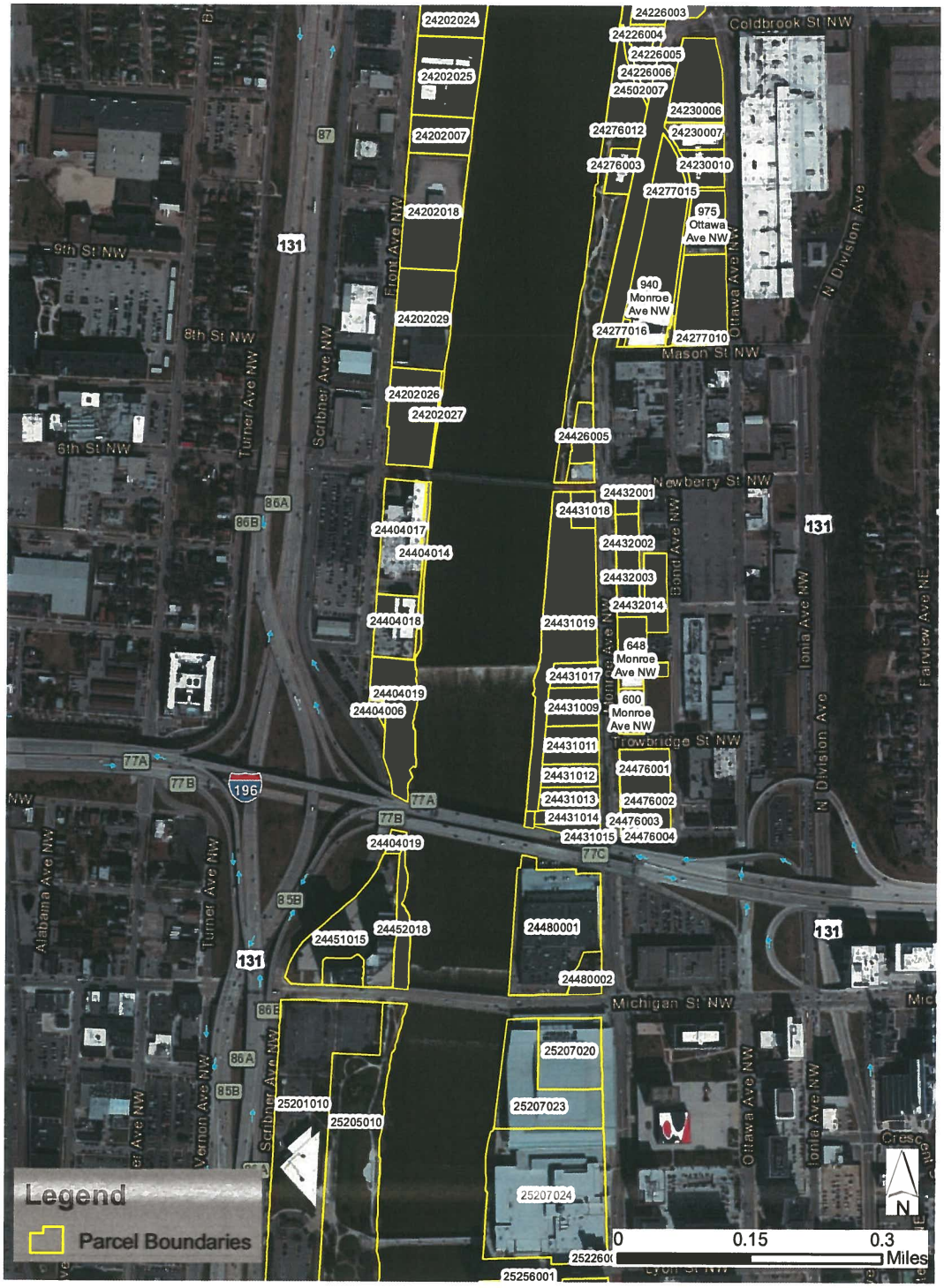
Zoning designations are defined as follows:

- *CC: City Center*
- *OS: Open Space*
- *SD: Special District*
- *TCC: Transitional City Center*

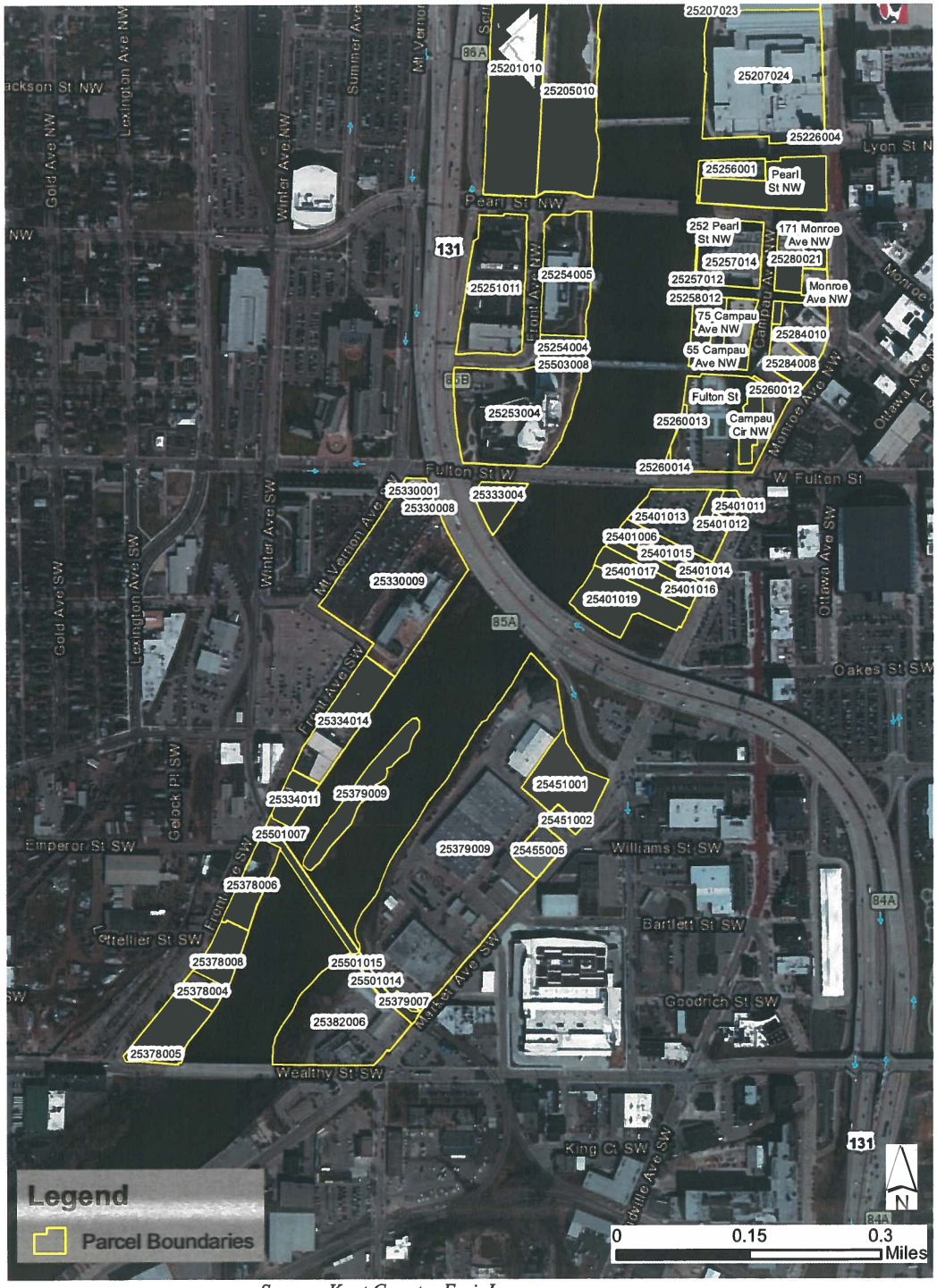
Map 7. Ann Street to Coldbrook Street



Map 8. Coldbrook Street to Lyon Street



Map 9. Lyon Street to Wealthy Street



Source: Kent County; Esri, Inc.
Analysis: Anderson Economic Group

Appendix D. Economic Impact Calculations

NET ECONOMIC IMPACT DEFINED

We define "net economic impact" as the new economic activity directly or indirectly caused by a project, investment, change in policy, or other such event. To quantify the economic impact of a project like the proposed Grand Rapids Whitewater project, we focus on economic activities that are likely to be realized as a direct result of the project being completed, while accounting for economic activities that might be displaced by the project or that would have occurred even if not for the project. Such displacement and substitution is not included as part of a net new economic impact estimate.

DETERMINATION OF NET NEW EXPENDITURES

Economic impacts stem from direct new spending that can be attributed to a project. In this project we focus specifically on expenditures that are likely to be made by new visitors who come to Grand Rapids because of new recreational and related uses of the river that are possible because of the restoration. To estimate the level of these expenditures, we relied on economic impact studies from other river restoration and whitewater park projects, as well as national outdoor recreation and participation surveys. This guided our estimation of users and visitors in four categories: whitewater users, other boating users, fishing users, and shore-based recreation users. We further used the economic impact studies and knowledge of the area to estimate the percent of users who would come specifically for the river or parks, thus excluding residents and visitors who would come to the city even if the restoration did not take place.

We next estimated the expected spending for each user group, again relying on information in previously completed studies and national outdoor recreation surveys, as well as our own experience and knowledge of the market. When we multiplied the net new visitors for each group by the expected expenditures for each user group, we arrived at a figure for total new expenditures.

See Table 1 on page D-2 and Table 2 on page D-4 for further details.

ESTIMATING INDIRECT IMPACTS

After calculating expected net-new spending (the direct economic impact) we then estimate the level of indirect economic activity that is stimulated by the direct activity. For example, a visitors make purchases and spend money in restaurants and hotels, the money circulates throughout the Grand Rapids economy, creating a multiplier effect, generating more economic activity across the area. To estimate indirect activity produced by these expenditures, we use the U.S. Bureau of Economic Analysis RIMS II Final Demand Multipliers for Output, Earnings, and Employment. The multipliers used reflect Kent and Ottawa county level data, adjusted to provide estimates for the City of Grand Rapids.

See Table 3 on page D-5 for the results from our economic impact analysis.

TABLE 1. Net New Visitorship Estimates

Whitewater Uses and Net New "Visitorship" Estimates		*Conservative Scenario*	*Potential Scenario*
Expected annual whitewater usage		8,500	10,000
Share of usage from out-of-region	90%		
Out-of-region usage substitution	20%		
Subtotal: Net new usage from out-of-region		6,120	7,200
Share of usage from in-region	10%		
In-region usage substitution	50%		
Subtotal: Net new usage from out-of-region		425	500
Average duration of use (days)	2.00		
Total: Net New Visitor Days		13,090	15,400

Non-Whitewater Boating Uses and Net New "Visitorship" Estimates		*Conservative Scenario*	*Potential Scenario*
Expected annual boating usage		34,000	40,000
Share of usage from out-of-region	75%		
Out-of-region usage substitution	25%		
Subtotal: Net new usage from out-of-region		19,125	22,500
Share of usage from in-region	25%		
In-region usage substitution	75%		
Subtotal: Net new usage from out-of-region		2,125	2,500
Average duration of use (days)	2.00		
Total: Net New Visitor Days		42,500	50,000

TABLE CONTINUED.

Fishing Uses and Net New "Visitorship" Estimates		*Conservative Scenario*	*Potential Scenario*
Expected annual fishing usage		57,500	69,000
Share of usage from out-of-region	75%		
Out-of-region usage substitution	50%		
Subtotal: Net new usage from out-of-region		21,563	25,875
Share of usage from in-region	25%		
In-region usage substitution	95%		
Subtotal: Net new usage from out-of-region		719	863
Average duration of use (days)	3.00		
Total: Net New Visitor Days		66,844	80,213

Shore-based Uses and Net New "Visitorship" Estimates		*Conservative Scenario*	*Potential Scenario*
Expected annual shore-based usage		100,000	357,000
Share of usage from out-of-region	75%		
Out-of-region usage substitution	35%		
Subtotal: Net new usage from out-of-region		48,750	174,038
Share of usage from in-region	25%		
In-region usage substitution	75%		
Subtotal: Net new usage from out-of-region		6,250	22,313
Average duration of use (days)	2.00		
Total: Net New Visitor Days		110,000	392,700
V. GRAND TOTAL NET NEW VISITOR DAYS		232,434	538,313

Source: Anderson Economic Group, LLC

TABLE 2. Net New Spending Estimates

Whitewater-boating User Expenditure Estimates		*Conservative Scenario*	*Potential Scenario*
Net new whitewater visitor days		13,090	15,400
Net new daily expenditure per user	$ 100.00		
Net new whitewater spending estimate		$ 1,309,000	$ 1,540,000
Non-whitewater Boating User Expenditure Estimates			
Net new non-whitewater boating visitor days		42,500	50,000
Net new daily expenditure per user	$ 75.00		
Net new non-whitewater boater spending estimate		$ 3,187,500	$ 3,750,000
Fishing User Expenditure Estimates			
Net new fishing visitor days		66,844	80,213
Net new daily expenditure per user	$ 125.00		
Net new fishing spending estimate		$ 8,355,469	$ 10,026,563
Shore-based User Expenditure Estimates			
Net new shore-based recreation visitor days		6,250	22,313
Net new daily expenditures per user	$ 10.00		
Net new other recreation spending estimate		$ 62,500	$ 223,125
GRAND TOTAL NET NEW EXPENDITURES		$ 12,914,469	$ 15,539,688

Source: Anderson Economic Group, LLC

TABLE 3. Total Recreational Direct Economic Impact

Economic Impact Calculation		*Conservative Scenario*	*Potential Scenario*
Output Multiplier	1.23		
Net New Economic Activity from River-User Spending		$ 15,858,967.63	$ 19,082,736.25
Earnings Multiplier	0.15		
Net New Earnings to Households from River-User Spending		$ 1,937,170.31	$ 2,330,953.13
Employment Multiplier	6.16		
Net New Employment from River-User Spending		80	96

Note: Multipliers are based on RIMS II multipliers for Kent and Ottawa counties, and have been adjusted by AEG to account for only the city of Grand Rapids. The adjustment is based on the ratio of the number of jobs in Grand Rapids to the number of jobs in the two-county area, and the density of jobs in Grand Rapids relative to the two-county area.

Source: Anderson Economic Group, LLC

Appendix E. List of Resource Documents

"America's Sporting Heritage: Fueling the American Economy," Congressional Sportsmen's Foundation, 2012.

"A Framework to Guide Future Planning and Investment," Progressive Urban Management Associates, 2011.

Braak, Willem, "2011 Economic Impact of Kelly's Whitewater Park in Cascade, Idaho: An Overview of the Park's Second Year in Operation," University of Idaho, 2012.

California State Parks, "The Health and Social Benefits of Recreation," California State Parks Planning Division, 2005.

Clark, Mike and Kevin Colburn, "Recreation and Economics," Presentation at River Rally, 2005.

Daniels, Michael and Frank Lazzara, "Chattahoochee River Restoration: Columbus, Georgia and Phenix City, Alabama Market and Economic Impact Analysis," June 3, 2005.

"Grand River Whitewater Park Preferred Alternative," Green Grand Rapids, 2009.

Hagenstad, Marca et al, "Preliminary Evaluation of the Beneficial Value of Waters Diverted in the Clear Creek Whitewater Park in the City of Golden," Stratus Consulting, 2000.

Hanshue, Scott and Amy Harrington, "Special Report: Draft Grand River Assessment," Michigan Department of Natural Resources Fisheries Division, 2011.

IAFWA-ASA Data Mining Project: Initial Michigan Findings, Southwick Associates, 2011.Loomis, John and Jim McTernan, "Fort Collins Whitewater Park Economic Assessment," Colorado State University, 2011.

Kelch, Dave et al, "The Value of Steelhead (Onochorhynchus mykiss) Angling in Lake Erie Tributaries," Ohio State University, 2006.

Lockwood, Roger, "Sportfishing Angler Surveys on Michigan Inland Waters, 1993-99," State of Michigan Department of Natural Resources, 2000.

O'Keefe, Damiel and Steven Miller, "2009 Michigan Charter Fishing Study," Michigan State University, 2011.

Outdoor Participation Report, The Outdoor Foundation, 2012

Outdoor Recreation Economy report, 2012, Outdoor Industry Association

Podolak, Kristen, "Cooling Off in Engineered River Parks: Park Use, Users' Perceptions, and Multipurpose Design Considerations," University of California-Berkeley, 2011.

Responsive Management, *The Economic Impact of Mountain Trout Fishing in North Carolina*, 2009, <http://www.responsivemanagement.com/news_from/2009-09-09.htm>, accessed December 12, 2013.

Southwick Associates, October 10, 2011, "The Economics Associated with Outdoor Recreation, Natural Resources Conservation and Historic Preservation in the United States," The National Fish and Wildlife Foundation.

Special Report on Paddlesports, Outdoor Industry Association and The Outdoor Foundation, 2009.

Stratus Consulting, January 30, 2002, "The Beneficial Value of Waters Diverted in the Blue River for the Breckenridge Whitewater Park and in Gore Creek for the Vail Whitewater Park."

"Truckee River Recreation Plan," Resource Concepts, 2004.

Appendix F. About AEG

Anderson Economic Group, LLC was founded in 1996 and today has offices in East Lansing, Michigan and Chicago, Illinois. AEG is a research and consulting firm that specializes in economics, public policy, financial valuation, and market research. AEG's past clients include:

- *Governments* such as the states of Michigan, North Carolina, and Wisconsin; the cities of Detroit, Cincinnati, Norfolk, and Fort Wayne; counties such as Oakland County, Michigan, and Collier County, Florida; and authorities such as the Detroit-Wayne County Port Authority.
- *Corporations* such as GM, Ford, Delphi, Honda, Taubman Centers, The Detroit Lions, PG&E Generating; SBC, Gambrinus, Labatt USA, and InBev USA; Spartan Stores, Nestle, automobile dealers and dealership groups representing Toyota, Honda, Chrysler, Mercedes-Benz, and other brands.
- *Nonprofit organizations* such as Michigan State University, Wayne State University, University of Michigan, Van Andel Institute, the Michigan Manufacturers Association, United Ways of Michigan, Service Employees International Union, Automation Alley, the Michigan Chamber of Commerce, and Detroit Renaissance.

Please visit www.AndersonEconomicGroup.com for more information.