Memorandum

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To: Heather Pope
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From: Hitchcock Design Group

RE: Columbus Riverfront Opportunity Analysis

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Summary

This Opportunity Analysis concludes the first of our three-phased study of the Columbus Riverfront between the 2nd and 3rd Street Bridges. It includes a review of important study area **resources, marketplace, and stakeholder expectations**. It also summarizes promising riverfront opportunities that we will explore in greater detail in the upcoming Alternative Riverfront Concepts phase.

Introduction

The **Columbus Redevelopment Commission** is leading an initiative to improve the appearance, recreational function, environmental quality, and economic benefit of the East Fork of the White River between the 2nd and 3rd Street bridges (see project map below).

On behalf of the city, the Redevelopment Commission has engaged a team of planning, design, engineering, and market economic professionals led by Hitchcock Design Group to create a compelling riverfront concept that improves access to and along the river, and creates dynamic public places consistent with the city's rich cultural history.

As an integral part of the project, the team will consider modifications of the low-head dam to improve river water quality, safety, and navigation. The Redevelopment Commission expects the concept to be finished in September and introduced to the community during a series of public workshops and meetings.

After an initial kickoff meeting with City of Columbus officials, the consultant team reviewed and analyzed existing data such as demographic studies, current land uses, market trends, and historical data to evaluate the existing conditions within the study area. The consultant team also reviewed several studies to gather up-to-date information about the natural and hydrological characteristics of the study area. Simultaneously, the team launched a project website and conducted a Community Survey (see **Appendix A**) that provided valuable primary data that will be used in the upcoming Alternative Riverfront Concepts phase.

The consultant team also conducted key stakeholder interviews and hosted a Community Workshop at Cal Brand Meeting Hall on April 5-6, 2017. During the Community Workshop, the consultant team provided an overview of the study area and its surroundings. The participants represented a broad cross section of the community and included business owners, residents, property owners, and elected officials. HDG asked stakeholders to share their thoughts, concerns, and ideas regarding the Riverfront and its potential, and encouraged stakeholders to keep up to date on the project through the website.

In the next phase, the Alternative Riverfront Concept, the consultant team will explore promising opportunities in greater detail to reach consensus on an overall strategy, the most promising improvements, and preliminary implementation recommendations.

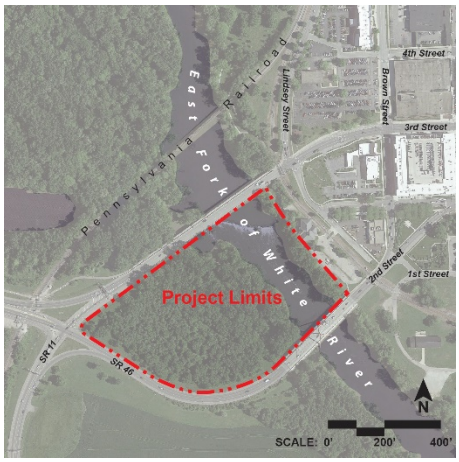

Figure 1. Project Map

Riverfront Today

Resources

The resource analysis considers the regional context, natural and cultural resources, land use and structures, infrastructure, and financial resources.

Regional Context

With a population of approximately 48,000, Columbus is a growing city with small town charm boasting a plethora of history, art, and architecture. With its close proximity to I-65, Columbus is easily accessible and is within 100 miles of several major cities, including Indianapolis, Louisville, and Cincinnati. Located in Bartholomew County, the study area is nestled between the 2nd and 3rd Street Bridges that carry the inbound and outbound traffic to and from Downtown Columbus. Though it is not easily accessible, the site is within a half mile walk from the heart of downtown. The 19.4 acre site

includes the east and west banks of the East Fork of the White River, as well as the river itself, between the 2nd and 3rd Street Bridges. The study area is just south of Mill Race Park, an 85-acre riverfront park designed by Michael Van Valkenburgh in conjunction with Stanley Saitowitz. Despite the expansive stretch of the White River and its watershed, there are few improved urban riverfronts near Columbus.

Natural Resources

The most dominant natural resource is the East Fork of the White River that flows through the project site. The Flatrock and Driftwood Rivers converge north of the site to feed the East Fork of the White River. Due to its location within floodway and floodplain, the site is structurally undeveloped except for the low-head dam. The site has limited accessibility due to steep slopes and thick vegetation. There are no jurisdictional wetlands within the project area.

Soil erosion is a problem along the east and west bank of the site. River current and spillway orientation continue to contribute to the erosion on the site.

Typical tree species found along the banks of the East Fork of the White River include silver maple, boxelder, sycamore (American planetree), cottonwood, green ash, elms, and sandbar willows. A large portion of the green ash trees have been killed by the emerald ash borer. There are very few shrubs due to the dense tree canopy. Herbaceous plants found on the forest floor include Virginia wild rye, reed canary grass, stinging nettle, and great ragweed. See "Waters of the U.S. Determination Report" in **Appendix B**.

The portion of the river that runs through the study area is considered to be one of the best smallmouth bass fisheries in the state. Other fish species found in the river include channel catfish, sunfish, bluegill, and more. A variety of wildlife inhabits the banks of the river, including wood ducks, kingfishers, spotted sandpipers, great horned owls, muskrats, groundhogs, an occasional blue heron, and fox squirrels.

Cultural Resources

The Riverfront is rich in cultural history, and has been an integral part of Columbus since the early 1800s. In 1821, a commercial ferry began carrying people across the river. The Columbus Bridge Company was incorporated in 1847, and constructed a bridge across the river that was completed in 1849. The expanding population of Columbus eventually led to the construction of two bridges, each carrying traffic in or out of downtown. These two bridges are the northern and southern boundaries of the study area. The most architecturally notable of these bridges is the Robert N. Stewart Bridge (formerly known as the 2nd Street Bridge), completed in 1999. Constructed as a part of the Front Door Project, the "legs" of the Robert N. Stewart Bridge frame the view of the Bartholomew County Courthouse as motorists approach downtown. The original Pump House was completed in 1871, and was constructed to provide a consistent water supply to the city. The original low-head dam that spans the river was constructed around 1890 to provide consistent water availability to Columbus after several significant buildings were destroyed by fire because lack of water pressure prevented fire fighters from extinguishing the flames in a timely manner. The dam remains, but it is no longer used for its originally intended purpose of providing water and water pressure to Columbus.

The City of Columbus has several historically and architecturally significant features throughout the community. The riverfront is close to many of those features, including Mill Race Park, the Bartholomew County Courthouse, The Commons, and many others within a half mile walking radius.

Due to the number of nearby archaeological sites, parts of the study area may be of archaeological significance. Butler, Fairman, and Seufert Civil Engineers, who performed the Historic Resource Inventory for the study area, recommend that the southernmost portion of the west bank undergo a

Phase 1a archaeological field reconnaissance before any improvements are constructed (see **Appendix C**).

Topography
The east bank of the river is very steep, with a height change of about 18 feet over a +/- 20' distance. The west bank has a height change of about 21 feet, but over a much larger area. The 10-year flood elevation is approximately 619' (NAVD88), and the 100-year flood elevation is approximately 622' (NAVD88).

Size
The total study area is approximately 19.4 acres
East Bank: 1 acre
West Bank: 13.4 acres
River: 5 acres
Length of riverfront within study area: 737 feet

Hydraulics & Hydrology
The East Fork of the White River has a watershed encompassing 1,700 square miles in ten counties. The contributing watershed is primarily agricultural in land use, and is typically not prone to flash flooding. When it does reach flood stage, flood durations typically last four days or longer, depending on the severity of the storm. During average flow conditions, the water surface increases 3-4 feet upstream of the dam. Downstream of the dam, flow moves in all directions, particularly near the west bank where an eddy forms. In large flood events, the dam is unlikely to impact flows. The lower portion of the riverfront site is subject to frequent flooding; it has flooded 10 times in the past four years. The upper portion of the site is less likely to flood; it has flooded less than ten times in the past century.

Based on fixed monitoring stations maintained by the Indiana Department of Environmental Management (IDEM), it appears the chemical and physical status of the East Fork of the White River at the riverfront site are of good condition. Few exceedances of water quality benchmarks have been observed and habitat evaluations have been favorable.

The low-head dam that spans the project site was originally constructed to increase the water pressure to the city and power grist mills. Despite its historical contributions to the City of Columbus, the dam is now obsolete. Low-head dams have many negative impacts on water quality, including disruption of water flow, sediment flow, and passage of fish and other species. They also impede river-based recreation and create a dangerous drowning hazard. The combination of reversed currents, dangerous rotating objects underwater, hard surfaces, large hydraulic forces, and low buoyancy created by low-head dams are a deadly combination. Between the years of 1960 and 2014, 287 low-head dam fatalities have been reported in the United States, as well as 71 injuries and 235 incidents. The Department of Natural Resources inspected the dam in 2007 , at which time they determined that it is no longer useful, in poor condition, and should be removed (see **Appendix D**).

In addition to the dangers present to river users, the dam has also caused a breech in the river on the west bank. Because this area is a capped landfill, there is the potential for pollutants to leech into the river if the water continues to erode the western bank.

The possible modification or removal of the low-head dam at the riverfront site provides both opportunities and challenges. Clear benefits of low head dam modification or removal include returned natural river flow, reconnected habitat for aquatic species, improved water quality, and increased river safety. The challenges consist of preparing for the release of the sediment to minimize turbidity and impacts from potential contaminants that have accumulated behind the dam. In

addition, regardless of what modifications may be considered or if the low-head dam is removed, there will inevitably be changes in the river morphology that will impact the channel shape and sinuosity, consequently requiring regulatory agency construction permits. IDEM and the U.S. Army Corps of Engineers (USACE) will regulate both temporary and permanent impacts below the ordinary high water elevation. IDEM will also want to know the potential impacts to water quality, plant life, and animal species that exist. A permit will also be required by the Indiana Department of Natural Resources (IDNR) for any fill placed in the floodway.

The consultant team is collecting survey data and working on a two-dimensional hydraulic model of the river that will serve as a baseline condition against which, we will compare various improvement concepts.

Streets & Railways

The study area is encompassed on three sides with roadways and bridges. The northern boundary of the study area is the 3rd Street Bridge, which carries traffic westward out of downtown. The southern boundary of the study area is the 2nd Street Bridge, which carries traffic eastward into downtown. The west/southwest boundary is where these two roadways converge at the SR 11 and SR 46 intersection. The property east of the study area is privately owned and currently used as a restaurant. Motorists are challenged to find Upland Brewery via Lindsey Street, which runs roughly north and south, but dead ends before it reaches 2nd Street.

The Pennsylvania Railroad Bridge is north of the site, which carries 4 and 20 trains through downtown on a daily basis. Because of the increased train traffic and the hazard it poses to pedestrians, city leaders have initiated plans to reroute the railroad around downtown. The most current concept would reroute the rail line west of the river. In addition, the February 2017 plan prepared by American Structurepoint suggests that SR 46 be elevated and reconfigured to eliminate the conflict between vehicles and trains. The concept also suggests an interstate-type cloverleaf interchange that may affect the Riverfront in three significant ways. If constructed as conceptualized, the study area may expand southward to include the land directly east of the proposed cloverleaf, vehicle speed may increase, making accessibility to the site challenging, and potential Riverfront and roadway improvements will need to be carefully coordinated.

The Columbus Thoroughfare Plan suggests a very long term goal to move SR 46 completely out of town.

Pedestrian Paths

The Columbus People Trail currently circulates along the river north of the study area through Mill Race Park. The path spans the river alongside the 3rd Street Bridge, on the north edge of the study area. There is a branch of the People Trail that ends at Lafayette Street behind the jail, but there is currently no connection on the south side of downtown between this branch of the trail and the trail through Mill Race Park. There is a section of the People Trail along SR 46 between I-65 and the river. The study area has the potential to be a connection point between these three trails.

Parking & Access

There is currently no parking or vehicular access serving the site. However, there are approximately 1,100 public parking spaces located within a ten-minute walking radius of the study area. Upland Brewing Company at the Pump House has approximately 65 parking spaces that are reserved for patrons, and according to the owner, the lot is frequently at capacity. Accessibility to the site, on both the east and west bank, is challenged, but there is a small, well-used foot path on the east bank leading down to the sandbar. There is currently no American Disabilities Act compliant pedestrian access to the site.

Exposure and Appearance
Community leaders consider the study area to be part of a larger "Front Door" visitor experience, and because of its location between two major bridges, the study area is very visible to both inbound and outbound motorists. With approximately 18,000 cars moving inbound and 17,000 cars moving outbound from Downtown Columbus, daily, the study area has thousands of onlookers. Even though it is not easily accessible, 42% of people responding to the Riverfront survey said they have been to the study area on foot. Another 34% said they were familiar with the area because they drive past it.

According to the survey results, the appearance of the study area has room for improvement. Only 11% of those surveyed said that they were highly satisfied with the overall attractiveness of the site, while the remaining percentage was split almost evenly between "somewhat satisfied" and "not satisfied."

Hazardous Waste/Landfill
The old city landfill is located on the west bank of the river within the study area. The site operated as a landfill from 1938-1966, and was designated a National Priority List (NPL) site in 1986. Remediation of the site began in 1993 and included leachate seep inspections, groundwater monitoring and use restrictions, and placement of a clean soil cover over the site. Remediation was completed in 1994, and five-year monitoring reports have been completed by IDEM in 1999, 2005, 2010, and 2014. The site was declared "site-wide ready for reuse" in 2012, and was deleted from the NPL in 2014. No additional hazardous materials investigations appear to be necessary at this time. See "Hazardous Waste Site Inventory" in **Appendix E** for more in depth information.

The site is still protected by Institutional Controls in the form of two Environmental Restrictive Covenants:

1993 Declaration of Restrictions
- There is to be no interference with improvements on the site related to remedial actions
- Groundwater exposure and use at the site is prohibited for any use other than for approved remedial actions.
- The site cannot be used for any other purpose, including agriculture, recreational, residential, commercial, or industrial, including any movement of soil or construction of structures related to the above uses, unless such construction is approved, in writing, by IDEM and USEPA.

2010 ERC (between City of Columbus, Cummins Inc, IDEM, and USEPA)
- Same as 1993 ERC summary above
- The security fence at the site cannot be removed
- Emergency repairs to sewers located within the site are permitted under certain conditions (as listed in the ERC)

Soils
Most the study area is located within floodway. Because of frequent flooding, the site is dominated by alluvial soils from years of sediment deposition. The existing low-head dam has also impacted the soils within the site. The dam has increased backwater, affected sediment transport, and changed the geophysical conditions of the East Fork of the White River. The dam also causes more frequent flooding and increased soil deposition within the study area.

Utilities
The study area is served by city-owned water and wastewater utilities and franchise-owned electric, data and communications services.

Marketplace

The market analysis considers area demographics, activities and tourism. We also considered comparable projects in other communities, which suggest best practices that may be appropriate in Columbus.

Demographics

The population in Columbus is growing at a faster rate than the rest of the county, state, and country, and household size is increasing, implying a higher number of children. Columbus has a relatively young population, with a median age of 38.8 in 2016, and the age bracket of 18 and younger is growing, which is different from other similar sized communities throughout the country. The senior population is also growing, consistent with the national trend. The residential population of 48,480 is relatively small, but there are 9400 people working during the day within a 15-minute walking radius from the project site.

Activities

The local population dines out at a rate that is well above the national average. Residents also participate in biking, boating, canoeing/kayaking, fishing, swimming, walking for exercise, birdwatching, and attending musical performances at a rate that is much higher than the national average. The highest participation levels are walking, running/jogging, swimming, biking, and fishing.

Tourism

Columbus is a genuine visitor attraction for the state of Indiana. Data shows that people come from out of state to visit Columbus for many reasons, including athletic tournaments, architecture, business, and more. Brown County and other surrounding outdoor attractions are also a popular destination for a large group of visitors. While Brown County visitors are heading in the opposite direction of Columbus, it puts them within close proximity to Columbus. Bartholomew County has a higher overnight visitor percentage compared to the rest of Indiana, and the length of stay and the visitor party size in Bartholomew County is longer/larger compared to the rest of the state. Visitors to Columbus engage in dining, shopping, sporting events, and outdoor recreation, and the participation in those four categories is higher than the rest of the state. Indiana attracts a higher percentage of young visitors (18-34 years) and more families with young children compared to other states and destinations within the country.

Best Practices

The common success factors found in comparable settings define the best practices that will likely be appropriate in Columbus. The consultant team considered their own portfolios of riverfront projects and Market and Feasibility Advisors also consider several other riverfronts. Our research suggests that when completed, the Columbus Riverfront should be multi-dimensional, attractive, distinctive, respectful, barrier-free, healthy, sustainable and incremental.

Multi-dimensional

We should consider improvements that target resident and visitor audiences and accommodate a variety of program requirements to provide a high return on investment for all project investors.

Attractive

We should create engaging, stimulating and well-maintained improvements that support and help define this gateway to downtown.

Distinctive

We should differentiate the riverfront from other local and area destinations.

Respectful
The process and the improvements should follow jurisdictional requirements, respect the riverfront stakeholders and support the community's rich cultural heritage.

Barrier-free
While challenging, we should provide access to the study area and its features for patrons with compromised mobility, and we should provide all patrons with barrier-free access to the river.

Healthy
We should create a variety of active and passive, accessible, comfortable, clean and safe experiences for all patrons.

Sustainable
We should create improvements that add environmental, economic and cultural value for years to come.

Incremental
We should phase the improvements over time to manage costs and to create and sustain momentum.

Stakeholder Expectations

Columbus Riverfront Stakeholders include government officials, property and business owners, and residents. In addition to on-going guidance provided by the Riverfront Citizens Committee, the consultant team interviewed key stakeholders, facilitated a community workshop, and conducted a community survey to gather critical insight and brainstorm riverfront improvement ideas.

Key Stakeholder Interviews

The consultant team interviewed approximately 30 community leaders and several jurisdictional representatives. As anticipated, we received a wide range of opinion, but there were five common themes that emerged from the interviews:

Importance
Even though Columbus has Mill Race Park and its many natural and man-made amenities, the riverfront study area is important because it is an unfulfilled part of the gateway ("front door") experience and downtown. And of course, the study area features very engaging, moving river water in a setting that offers a wide variety of perspectives and engagement opportunities.

Connectivity
Interviewees stressed the importance of 3-dimensional (up/downstream, lateral and vertical) connectivity, and they stressed walking and cycling connections, north, south and west as the highest priorities. However, many interviewees expressed interest in canoeing or kayaking, and many expressed the need for some on-site parking to accommodate a variety of loading, maintenance, family and mobility-challenged interests.

Activity
Talent attraction and retention is a major community priority, so anything that we can do to activate engaging, in-or-near-river experiences that appeal to millennials and families is very desirable. Active recreation also appeals to tourists.

Hospitality
Hospitality is critically important. Every aspect of the riverfront, from convenience to comfort to safety to appearance should create a positive and memorable experience for visitors and residents.

The Columbus Way
Some communities want to "go big or go home." Columbus seems to want it "done right or not at all." The emphasis on quality (loosely defined as durable design distinction) is unmistakable.

Community Workshop
The consultant team facilitated a public workshop on April 5, 2017 that was attended by approximately 70 energetic residents and others with a keen interest in the riverfront. The team introduced the project and presented preliminary data about the study area resources and market. The team facilitated individual and interactive group exercises that identified some common interests and priorities of the participants when asked to describe the riverfront in 2022.

Trail
Overwhelmingly, the participants want to see multi-purpose trails that connect the study area to local trails and downtown.

Whitewater
Participants expressed a noteworthy interest in a whitewater park as a replacement for the existing dam.

Kid attractions
Participants also expressed interest in distinctive, river-themed attractions that target children and families.

New park
Participants saw the western portion of the study area as an opportunity for a unique park offering that is complementary to, but distinct from Mill Race Park.

Natural environment
Participants want to see all improvements emphasize nature and the environment.

Community Survey
Over 600 people took the survey that was posted on the Columbus Riverfront website, which suggests both an important level of interest and statistically valid guidance. Please see **Appendix A** for complete results, which are summarized as follows:

Approximately 75% of the respondents are "familiar" or "very familiar" with the study area because of their daily travels across the bridges or because they have visited The Pump House. Respondents are least satisfied with noise level, maintenance, safety and river access.

More than half of the respondents consider the study area to be part of downtown, and 58% of the respondents visit downtown, weekly or daily for dining, arts/entertainment or to work.

Respondents are physically active. More than half of the respondents visit Mill Race Park multiple times per year to walk, run, cycle, stroll along the river or simply relax. In fact, 70% of the respondents walk, run or cycle, often, in their neighborhoods or along one of the existing trails in Columbus, and 63% participate in water-based activities.

The top 3 reasons why respondents think that the riverfront should be improved are to provide more activities for residents, increase water-based recreation and link downtown to the river. Respondents top 3 improvement suggestions were better, more frequent river access, more trails and bicycle facilities and a whitewater course.

Approximately 77% of the survey respondents indicated that they would very likely use the river if it were improved.

Riverfront Tomorrow

Goal

The long-term goal of the Columbus Redevelopment Commission for the riverfront study area is to:

Create and sustain an iconic riverfront experience that strengthens Columbus' distinctive brand and robust economy.

Objectives

Superbly **connect** the riverfront to other local and regional destinations.

Attract residents, daytime workers and regional visitors with a distinctive package of river-oriented public improvements, and over time, additional private sector investment.

Build and maintain beautiful and environmentally respectful riverfront improvements that **complement** Columbus' rich cultural tradition.

Upon completion of the Columbus Riverfront plan incrementally **phase** the project to create and sustain momentum.

Promising Opportunities

On April 6, the consultant team brainstormed opportunities to accomplish the riverfront goal and objectives, then discussed the most promising opportunities with the Riverfront Steering Committee. The concepts, which focused on primarily on connections and attractions such as:

- All concepts illustrated improved 3-dimensional connectivity and featured modification or removal of the dam.
- Some concepts illustrated a riverwalk on the east bank as both a connection and an attraction. Some concepts emphasized a simpler trail connection on the east bank and a more modest trail along the west bank.
- All concepts illustrated some level of river-themed play on gentler slopes of the west bank. Some concepts illustrated more elaborate river-themed play opportunity on the west bank downstream of the remodeled dam.
- Some concepts packed the river and west bank with active recreation attractions.

- All concepts accommodate the probable, but unscheduled realignment of SR 46 and recognize the importance of the gateway experience and the challenges of west bank access, both now and in the future.

- One concept featured a berm on the landfill site that is a gateway feature, look-out, and backdrop for westbank activities.

- Challenges that require special attention during the next phase include:
  - The future realignment of SR 46, as currently conceptualized, may cause increased motorist speeds where we desire lower speeds and a tricky left-in/out of the west bank property.
  - The street network east of the study area complicates the lateral connectivity to downtown.
  - Construction restrictions on the capped landfill will complicate some desired improvements.

Strategy

Based on the existing resources, marketplace and stakeholder expectations, the consultant team recommends the following strategy to advance the community's riverfront goal. Each component should meet the four objectives and most, if not all the best practices (multi-dimensional, attractive, distinctive, respectful, barrier-free, healthy, sustainable, incremental).

Connect

Construct a 3 dimensional network of related connections.

- vehicular access and limited parking on the west bank for maintenance, emergencies, loading, and accommodation of less mobile patrons
- sidewalks that expand the People Trail along the river with connections north and south of the bridges
- sidewalks that provide river access from the top of the banks
- sidewalks that clearly link the riverfront and downtown, providing convenient access to nearby public and privately owned destinations
- dam modification that allows in-stream watercraft passage

Attract

Construct several distinctive public features that target young professionals and families, which in turn, are catalysts for related, nearby private sector investments.

- whitewater course that appeals to a variety of experience levels
- river-themed children's play space
- high-amenity riverwalk (spacious, and sculptural with attention to surfaces, fixtures, furnishings, lighting, public art and landscaping) with node(s) that accommodate small groups and overlooks with great river views
- the western/southern edge of the west bank property should get special attention as part of a beautiful Columbus "front door" downtown gateway

Complement

Reaching beyond "respectfulness," design and construct the public features to be captivating, giving special attention to:

- the gateway experience
- the river and its story in Columbus

- the community and neighborhood brand strategy

Phase
Develop a phase-able approach to the riverfront improvements.