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# RIVER PARK GUIDE

*By McLaughlin Whitewater*



# RIVER PARK GUIDE

*Restoring rivers the McLaughlin way*

When a community works with McLaughlin Whitewater, we come in with a methodology, not a planned solution. We listen to your goals and work to develop world-class waves and recreation for kayakers and surfers while maintaining the habitat, health and flow of the river to empower everyone in your community to have a relationship with the river.

This step-by-step guide, based on decades of experience in the whitewater industry, is intended to help you navigate the process of turning an exciting idea into a vibrant river park that brings a wealth of social, environmental and economic benefits to your community.

## WHAT'S YOUR ROLE?

**Successful river park projects require the entire community to get behind them.** As you read through this guide, consider each step not only from your perspective but also from those of the other **advocates, enthusiasts** and **decision makers** involved. Educate yourself so you can ask the right questions, focus energy on the areas that matter and maintain momentum. Completing whitewater projects can be challenging and take years. They require focused energy, persistence and passion. We're here to support your efforts to make your vision a reality.

Get your project started with McLaughlin! >



## OUR SERVICES

**We offer a range of services to help facilitate your project — every step of the way.** From strategic messaging to finding funding and technical solutions, we have done this many times before. We offer:

- VISIONING & PLANNING
- STAKEHOLDER ENGAGEMENT
- FEASIBILITY
- DESIGN
- PERMITTING
- FUNDING
- CONSTRUCTION SUPPORT
- START-UP & OPERATIONS

# BUILDING SUCCESSFUL RIVER PARKS

*The steps to launch your river park project*

- #1 THE IDEA**
- #2 SITE FINDING**
- #3 STAKEHOLDER OUTREACH**
- #4 IDENTIFY FUNDING**
- #5 FEASIBILITY STUDY**
- #6 PRELIMINARY DESIGN**
- #7 PERMITTING**
- #8 FINAL DESIGN**
- #9 CONSTRUCTION PHASE**
- #10 START-UP & TUNING**
- #11 MEET US AT THE RIVER!**
- #12 OPERATIONS & MAINTENANCE**



## MEET US AT *The River*

River Run Park  
Sheridan, CO



### URBAN RIVER RESTORATION

River Run Park on the South Platte River is a unique urban river revitalization of a once-degraded and dangerous reach that reconnects the community with a now healthier river.

- Six** whitewater wave features
- Revolutionized low-flow** wave performance
- Two** WaveShaper adjustable surf waves
- Three quarters of a mile** of river restoration
- Innovative** fish habitat
- Enhanced river access**, upland park spaces
- U.S. Army Corps of Engineers/FEMA** flood protection

[View the River Run Park Project on our website >](#)

## STEP # 1

# THE IDEA

### GOAL: Form an inclusive vision for a successful river park.

Most successful projects start with a group of highly motivated, passionate advocates or community leaders relentlessly pursuing the idea.

Try to form a vision of an improved river that promotes a healthy environment and lifestyle for surrounding communities. Now is the time to ask the big questions. Are there problems that can be solved? Who should your river park serve? What features would meet the needs of all user groups? Envision a project that is inclusive to all, maximizing social, environmental and economic benefits for the river and community.

- TASKS:**
- 1.1 **Create a vision that key stakeholders can get behind. One that includes broad goals, attracts diverse users, and offers social and economic benefits for the community will always draw more funding.**
  - 1.2 **Identify problems that need to be solved beyond simply adding river recreation. Examples include safe access, flooding, infrastructure, economic development and environmental degradation.**

**TIMELINE:** **The initial idea can come together quickly but must be refined throughout the life of the project to consider diverse goals and perspectives.**

[Want to watch a video on River Parks? >](#)



### Site Finding Tip

Existing dams, diversions and other structures in your river are good places to consider a river park because there is an opportunity to improve safety, fish passage/aquatic habitat and function of the infrastructure while creating a recreational amenity. These multipurpose projects can attract much (or) wider funding sources and bring together a more diverse group of stakeholders, and they are often much easier in terms of getting approvals and permits.

## STEP # 2 SITE FINDING

### GOAL: Identify the best potential sites for your project.

Can your vision be realized? It starts with locating potential sites that work for recreation, address existing problems, work with needed infrastructure like water diversion, restore habitats and make the river better. Urban rivers are almost always degraded and dangerous. They lack access and are underused and underappreciated. A river park project can change all of this for the better.

McLaughlin helps communities with site finding and supports advocates by providing the advice and materials they need to get river projects off the ground. We believe in your cause and are happy to share our knowledge and experience.

- TASKS:**
- 2.1 **Gather basic site information to determine whether the site has adequate flow, drop (vertical distance the water drops) and other location characteristics that will lead to success.**
  - 2.2 **Focus on sites with ample water throughout the year to create social, environmental and economic benefits for the community.**

[Check out Surf Anywhere's document for details on site finding >](#)

**TIMELINE:** One to two months



## STEP # 3

# STAKEHOLDER OUTREACH

**GOAL:** Communicate project intent and collaborate with stakeholders early in the planning process to build and maintain consensus.

Rivers touch entire communities. The success of your project requires selling the vision to the public and key stakeholders such as dam owners, politicians, city management, business leaders and river advocates. The more people with diverse interests and influence who believe in the project, the better the chances of success.

Due to the far-reaching impacts and influence of rivers, working with diverse owners and stakeholders is a given. Collaboration and building consensus are a major part of our approach to successful projects.

- TASKS:**
- 3.1 Identify community stakeholders such as kayakers, surfers, river groups, outfitters, fisherman, business owners, landowners, farmers, infrastructure operators, advocacy groups, politicians, families and interested citizens.
  - 3.2 Identify regulatory agencies that will ultimately approve your project, such as government entities (local, state and federal), state departments of natural resources/fish and game, river management agencies, U.S. Fish and Wildlife, U.S. Army Corps of Engineers, Federal Emergency Management Agency (FEMA), U.S. Environmental Protection Agency (EPA), U.S. Bureau of Reclamation and First Nation Tribes.
  - 3.3 Consider creating a coalition to move your project forward. It's more work than one person can do, and involving parties from across the community will exponentially increase both project reach and momentum.
  - 3.4 Hold regular meetings with stakeholders to discuss project goals and gather feedback for planning, design and permitting.

**TIMELINE:** The initial idea can come together quickly but must be refined throughout the life of the project to consider diverse goals and perspectives.



## Case Study

### ECONOMIC IMPACT OF RIVER PARKS

The Chattahoochee River Restoration in Columbus, GA, has driven economic revitalization for the region. In the first three years, the project generated:

Over 100,000 rafting customers

\$74M in capital investment

42 new businesses; several university extensions

\$24M annually in gross revenues

400 new jobs

18% increase in gross tax receipts

## STEP # 4

# IDENTIFY FUNDING

**GOAL:** Define funding sources and schedule.

A fundamental aspect to fulfilling your vision is paying for its development and construction. Whether you are pursuing resources to design and build the course or support its operations and maintenance, we have experience helping clients develop funding strategies to attract public and private financing.

Broad goals attract more money — it pays to think beyond just recreational benefits. Sell the social, environmental and economic benefits to attract funding from the wider community.

Multipurpose infrastructure projects attract more funding. Safety and recreation features can be added during the replacement or retrofit of infrastructure projects at minimal cost. We have done many of these types of combined projects over the decades with great success.

Upfront dollars are almost always needed to support funding in a highly competitive atmosphere. An economic impact study can be a useful tool during this phase to help local and regional decision makers understand the kinds of economic transformations that flow from successful whitewater projects.

- TASKS:**
- 4.1 Develop a funding plan, including grant cycle schedules and requirements. Potential funding sources include city, county, state, federal, corporate, private donors, grants and conservation/recreation groups. Funding is very specific to each project based on many factors. McLaughlin can help you identify funding in your area.
  - 4.2 Rally your community to bring money to the table. Projects that maximize benefits to the river, infrastructure and community draw more funding. Focus on broad categories of funding rather than details.

**TIMELINE:** Throughout planning and design phases of the project.

## STEP # 5

# FEASIBILITY STUDY

**GOAL:** Professional evaluation of site(s) to further develop initial concepts and define the cost range.

The first project dollars should be spent on bringing in an expert to conduct a feasibility study. This initial expense often represents the most valuable dollars spent as it sets the course for the entire project.

Feasibility studies help develop and refine project objectives, identify opportunities and constraints, collect site information, create concept sketches or renderings that bring your idea to life, estimate costs and lay out next steps. Most states require them as a condition of permitting.

McLaughlin Whitewater has done dozens of feasibility studies in the U.S., Canada and Europe. We take pride in our track record of successful, safe and high-return projects. The feasibility study is more than an attractive rendering—it's a customized road map to a successful project.

- TASKS:**
- 5.1 **Involve an expert to guide you through the feasibility study and project funding.**
  - 5.2 **Use the completed study and sketches to advance project credibility, stakeholder engagement and fundraising efforts.**
  - 5.3 **Select the site. Good sites make good waves and whitewater possible, dramatically increasing project success. Often there will be multiple sites that are feasible. McLaughlin can help facilitate stakeholder discussions and decision on which site makes the most sense.**

**TIMELINE:** One to six months



## WAVE SHAPER *Highlight*

Great waves are rare and difficult to design. For a wave to form, everything has to come together perfectly. We recognized this decades ago and developed our patented WaveShaper, the first and only truly adjustable wave technology. **The WaveShaper creates exceptional waves consistently despite huge fluctuations in river conditions, including lower flows. WaveShapers make better waves for more days on the water. They are consistent and customizable—you can create optimal waves for different users with the push of a button.**



## STEP # 6

# PRELIMINARY DESIGN

**GOAL:** Develop design to a 30 percent level for permitting, budgeting and funding.

The initial design phases advance the concepts in the feasibility study with details essential for reliable budgeting and helps secure permitting. While many firms outsource these drawings, McLaughlin Whitewater relies on an in-house staff of professional engineers to ensure renderings meet all project goals.

Preliminary design initiates the most expensive phase of the project. Accurate, thorough existing conditions assessments, technical designs, schedules and cost estimates form the foundation of project success.

- TASKS:**
- 6.1 **Building on the feasibility study, further define the design, taking into account detailed site conditions, soil composition, site contamination, topography/bathymetric mapping results, land ownership, habitats and ecology, wetlands and existing infrastructure (dams, utilities, etc.).**
  - 6.2 **Hydraulic Modeling—McLaughlin uses the most advanced modeling tools, including Froude Scale Physical Models and 3-dimensional (CFD) computer models, to accurately predict how waves and whitewater will perform.**
  - 6.3 **Project design is developed to a level of detail required for permit applications and more accurate costs within 30 percent contingencies. Project design is where your river park starts to come to life! Good design is the difference between an unsafe river feature and a great wave.**
  - 6.4 **Complete design drawings, studies and assessments, reports and cost estimates.**

**TIMELINE:** Three to nine months

## HYDRAULIC MODELING *Highlight*

We don't leave things to chance. Our industry-leading modeling capabilities are tried, tested and true—evident in our portfolio of high-performance waves and whitewater. The foundation of our design process is hydraulic modeling, which allows us to accurately predict how your project will work even in the dynamic river environment. It is much easier to make changes on paper than in the real world. We match the level of modeling effort with the requirements and complexities of your site.



McLaughlin Whitewater has completed over a dozen physical models more than all other whitewater firms combined!

## STEP # 7 PERMITTING

**GOAL:** Submit permit applications and consult with relevant agencies.

Permitting can feel daunting. We have used a proven methodology to secure permits across the U.S. with great success. We believe in partnering with local environmental experts and working closely with resource agencies early and throughout the design process. In many cases, projects create river health benefits and address ecological sensitivities.

Permit requirements vary by project and region. A typical wave project involves six or more permits from local, state and federal agencies. Working closely with resource agencies will greatly improve your chances of securing permits and approvals quickly and economically.

**TASKS:** 7.1 **Communicate and consult with agencies early in the planning and design process. Resource and permitting agencies include:**

- **Federal – U.S. Army Corps of Engineers, NOAA Fisheries, U.S. Fish and Wildlife, FEMA, Bureau of Reclamation**
- **State – Health departments, environmental protection departments, fish & wildlife/department of natural resources**
- **Local – Building departments, floodplain administration**
- **Other – Landowners, infrastructure owners**

7.2 **Conduct pre-application meetings to allow agencies to identify key issues and studies that may be needed for permitting. Typical permits required include U.S. Army Corps of Engineers (Clean Water Act section 401 and 404), FEMA (floodplain permit), erosion control and stormwater management, dewatering for construction, and local building permits. Permits vary by location and waterway.**

**TIMELINE:** Six to 18 months (or more in environmentally sensitive rivers)

## STEP # 8

# FINAL DESIGN

### **GOAL:** Final documents needed for bidding and construction.

Dialing in the details of your project happens during final design so that a contractor has all the information they need to build it.

Good design is key—it's much easier to change things on paper than to move rock and water. Bold ideas backed by excellent designs have the power to transform rivers and communities and attract athletes and recreationalists from afar.

This is the core of the McLaughlin difference. We have a long tradition of design excellence and innovation in broad and diverse areas of river restoration, infrastructure, whitewater, adjustable waves and safety—delivering successful projects consistently, making rivers and communities stronger. Our staff customizes every design with proven engineering to meet the needs of the community and river. These projects are hard, so we streamline the process with the people, tools and experience to make your project successful.

**TASKS:** 8.1 **Build on the preliminary design to complete contract bid documents, specifications and drawings.**

8.2 **Clearly communicate all details needed for a contractor to build your project, including components, materials and products.**

**TIMELINE:** Three to nine months



# STEP # 9

## CONSTRUCTION PHASE

**GOAL:** Build the designed project and make your vision a reality.

When construction begins, you can see your vision begin to take shape. We work closely with key stakeholders during construction to ensure project quality.

The importance of your project being built by a qualified contractor with river experience cannot be overstated. **We fully engage with the contractor, owner and river community during construction to ensure that all project goals and objectives are met.**

- TASKS:**
- 9.1 Final design documents are packaged into a construction contract for bidding.
  - 9.2 Solicit bids and select contractor.
  - 9.3 Administer contract and initiate construction.
  - 9.4 Engineers collaborate closely with contractors, stakeholders, regulatory agencies, owners and park operators to ensure success.

**TIMELINE:** Four to 12 months

# STEP # 10

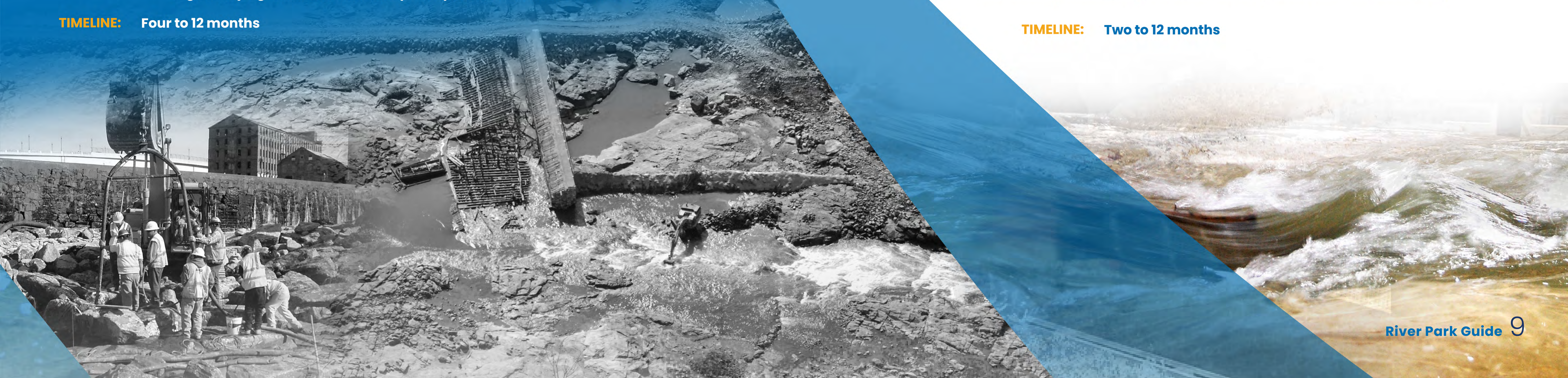
## START-UP & TUNING

**GOAL:** Optimize wave and whitewater performance.

Great waves are a game of inches—when your construction tools are boulders and backhoes, final tuning is often required to meet the intended hydraulic design. Our passion for river waves led us to develop our patented WaveShaper technology, which is proven to deliver bigger, better and more consistent waves, period. The WaveShaper allows tuning with the push of a button, making tuning much easier. With the WaveShaper, tuning is not securing rocks or rebuilding structures that have moved or waves that don't work. Our approach focuses on good planning, design, and construction to set the stage for successful and cost-effective final tuning.

- TASK:**
- 10.1 Assess completed project to optimize recreation and safety performance.
  - 10.2 Develop a tuning program with schedules and resources needed. Tuning often takes additional time due to flow conditions in the river for evaluation and to complete tuning work.
  - 10.3 Communication with the public and stakeholders. Everyone will be very excited to get out and recreate at the project, but tuning needs to be done first. Setting realistic expectations on the process and timelines is key.

**TIMELINE:** Two to 12 months





## STEP # 11 MEET US AT THE RIVER!

### GOAL: Have fun!

It is not uncommon for a wave project to take five years or more. You have made your river and community a better place. Time to get on the water to celebrate this hard-earned success.

- TASKS:**
- 11.1 **Get on the water.**
  - 11.2 **Bring friends and family.**

- 11.3 **Consider community events and festivals that celebrate the river and project.**
- 11.4 **Leverage the success of completion to gain notoriety for the project through media outlets. Provide good press for all those people and organizations that supported, advocated, worked for and funded the project.**

**TIMELINE:** Life of the project

## STEP # 12

# OPERATIONS & MAINTENANCE

**GOAL:** Long-term management of facilities, safety and whitewater performance.

Successful projects require ongoing operations and maintenance programs developed with collaboration between designer, owner, community and users.

Adjustable waves create better, more consistent waves but require more operations and maintenance than non-moveable waves. Most high-performance surf waves in the U.S. are adjustable.

Durability is an issue in the whitewater industry, with many projects requiring partial or complete rebuilds within the first five years. As the industry leader in reliable, durable, structurally sound river parks, this is not the case with McLaughlin Whitewater projects. Maintenance of our wave structures typically only includes periodic sediment and debris removal.

**TASKS:** 12.1 **Identify the entity that will be responsible for operations and maintenance early in the project development.**

12.2 **Secure personnel and create an operations and maintenance plan.**

**TIMELINE:** Life of the project, 50+ years





# DROP US A LINE!

**GOAL:** Contact McLaughlin Whitewater to get started and talk with a whitewater specialist.

We'd love to explore your ideas and help you unwind what's possible in your community. We can untangle complicated sets of requirements and apply decades of experience with technical expertise and thoroughness. We have many resources to support your river project journey that we are more than willing to share. We're excited to meet you, learn about your project and explore the opportunity to create a unique whitewater project for your community.

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Thank You for Your Time!



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