

Field Guide for Cleaner Currents

THE TOOL



EXECUTIVE SUMMARY

UCSB



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For six years, in eight diverse river systems spanning eight countries over four continents, the Clean Currents Coalition amassed a wealth of knowledge and experience for the implementation and operation of successful river plastic capture projects. Their lessons learned, common challenges and solutions, and actionable advice is compiled in this open access guide as a resource to help others maximize the impact of similar projects.

Together we can turn off the tap of plastic pollution, one river at a time.

GUIDING PRINCIPLES

These ten guiding principles are the most fundamental recommendations for success gathered from the experience of the Clean Currents Coalition that are applicable throughout all phases of a river plastic capture project.

- 1** Leverage the project to turn off the upstream sources of plastic pollution

- 2** Anticipate and plan for unpredictable delays and expenses

- 3** Work with people that want to work with you

- 4** Maintain autonomy of local leadership and respect for community voices

- 5** Develop positive relationships with local, regional, and national governments

- 6** Tailor the project to local environmental, social, economic, and cultural contexts

- 7** Prioritize long-term, sustainable operations in the project design and budget

- 8** Involve, empower, and invest in local communities

- 9** Remain flexible to adapt to challenges and changing circumstances

- 10** Collect data and use it to create positive change


© The project phases in which each guiding principle is of particular importance are denoted by their respective icons

PERMITS

Intersecting Guiding Principles

1 2 5 7 10

Background

Permitting is a necessary step in the implementation of all river plastic capture projects, but the specific permit types and requirements will vary by location. Acquiring permits includes conducting thorough research and preparation, building trusting relationships with stakeholders involved in the process, and navigating unforeseen delays.

Key Insights

- Develop a comprehensive understanding of the local regulatory landscape and permitting processes.
- Budget for permit application fees and costs with a buffer for unforeseen expenses.
- Build positive and trusting relationships with permitting agencies and stakeholders.

Coalition Experience

Clean Currents Coalition, Global

Communication starting early and often with municipal, state/provincial, and national officials was critical across all projects, no matter the location or how stringent the regulatory landscape. The scope of these river plastic capture projects was often new to permitting officials, resulting in delays to navigate bureaucracies and determine what permits were required, what information would be needed, and who should be involved.





SITE SELECTION

Intersecting Guiding Principles



Background

Selecting a suitable site for the physical river plastic capture infrastructure is essential. Be prepared to consider multiple prospective sites, analyze trade-offs, and have backup options should the initial selection present insurmountable challenges.

Key Insights

- Observe prospective sites early in the scoping process over multiple seasons and conditions.
- Collect hydrological, pollution load, debris composition, and other important data.
- Consider multiple sites and/or rivers and be prepared to be flexible and adaptable.

Coalition Experience

Marea Verde, Juan Díaz River, Panama City, Panama



After a year of project development, a few members from the community adjacent to the selected site expressed antagonistic "not-in-my-backyard" concerns about the project. These detractors proved unwilling to collaborate for a solution in good faith, so Marea Verde moved their project to a different river and successfully alleviated any concerns from the outset with the new community.





PLASTIC CAPTURE TECHNOLOGY SELECTION & PROCESS DESIGN

Intersecting Guiding Principles



Background

Selecting a plastic capture technology and designing the operational procedures requires a unique approach that is tailored to the local conditions. Despite careful planning, remaining adaptive with iterative adjustments and improvements to the technology and operations process may be necessary over time.

Key Insights

- Consider the future operation, maintenance, and repair requirements of capture technology.
- Ensure installation and operations are feasible – physically, financially, and practically.
- Select technology and processes tailored to withstand the unique challenges of a site.

Coalition Experience

Ichthion Limited, Portoviejo River, Portoviejo, Ecuador

The initial use of a highly engineered technology at a remote location of the Portoviejo River increased logistic challenges for the more frequent maintenance and repair needs associated with complex capture systems. From this experience, Ichthion Limited designed a simpler technology when the project expanded to a second capture site.





INFRASTRUCTURE INSTALLATION, OPERATIONS, & MAINTENANCE

Intersecting Guiding Principles



Background

Maintaining physical infrastructure in harsh environments like rivers invariably requires considerable experimentation and trial and error. Hardware maintenance and repairs are inevitable, but capture devices and operational protocols can be designed with flexibility in mind to enable improvement over time.

Key Insights

- Create local jobs by employing community members to carry out day-to-day operations when possible.
- Create an equitable, respectful, and safe working environment that prioritizes people.
- Set feasible and adaptable operational protocols as project scope and resources allow.

Coalition Experience

Greeneration Foundation, RiverRecycle, & Waste4Change (Citarum Repair Project), Citarum River, Bandung, Indonesia

Issues with international importation of hardware, large magnitude seasonal shifts in water level, and massive outbreaks of water hyacinth were all challenges faced in the dynamic Citarum River. Through iterative, flexible, and creative adaptations, the Citarum Repair project was able to overcome the challenges posed by the local environment.





DATA COLLECTION

Intersecting Guiding Principles



Background

River plastic capture projects provide a strategic opportunity to collect detailed data on plastic pollution. These data can be used to inform more efficient upstream solutions that target the main sources of plastic pollution and can be used to track project impact.

Key Insights

- Establish clear, consistent, and well-documented data collection protocols.
- Design data collection methods that are operationally feasible – start simple and expand.
- Consider metrics including total and sorted plastic categories and waste management fates.

Coalition Experience

Ocean Conservancy & the Centre for Marinelife Conservation and Community Development (SPLASH Project), Red River, Nam Dinh, Vietnam

Captured plastic was meticulously sorted and weighed using standardized data collection protocols; surveys of local community members were also conducted before, during, and after to measure the SPLASH project impact. This enabled the opportunity to analyze the effectiveness of local upstream plastic pollution policies and the progress of the project over time.





WASTE MANAGEMENT

Intersecting Guiding Principles



Background

Once plastic is captured from a river, it is crucial that this waste is managed properly to avoid it entering the environment again. In many cases, delivering captured plastic to a sanitary landfill may be the only available solution; other options may include recycling, incineration, or waste-to-energy.

Key Insights

- Identify all possible waste management solutions available during the site selection process.
- Budget for fees, expenses, and possible revenue associated with waste management.
- Understand local recycling capabilities, which are often limited or even non-existent in underserved areas.

Coalition Experience

Terracycle Global Foundation, Lat Phrao Canal, Bangkok, Thailand

Operating on a “no waste to landfill” policy, the TerraCycle Global Foundation invested in meticulous washing, drying, and sorting of captured plastic to maximize the fraction suitable for recycling. The remaining captured plastic was used as feedstock at a local waste-to-energy facility.





COMMUNITY ENGAGEMENT, INVESTMENT, & EMPOWERMENT

Intersecting Guiding Principles



Background

Every phase of a project is more successful when there is local community support, leadership, and input. Invest in the community by offering local employment, building capacity through workshops and training, and providing tools that empower self-sustained, long-term solutions.

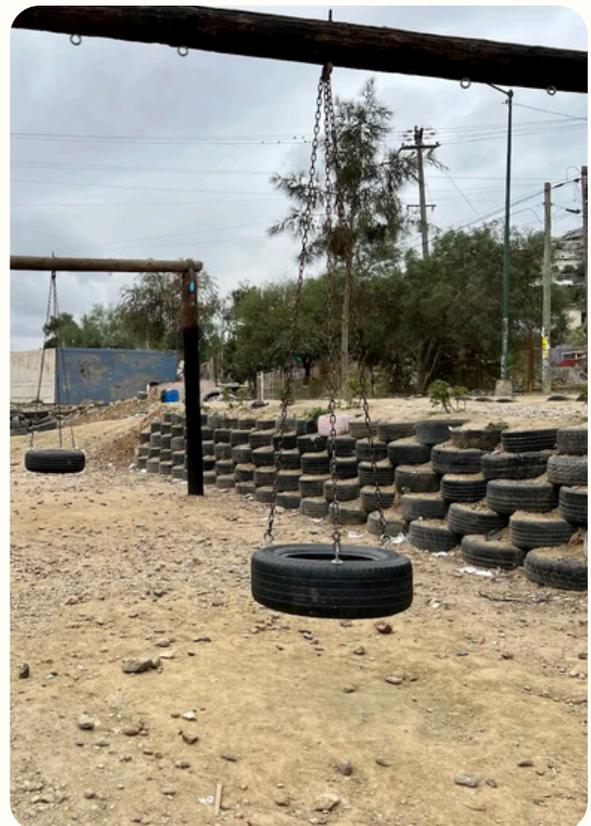
Key Insights

- Identify and connect with community leaders, figures that will differ by culture or location.
- Respect local autonomy in decision making, project development, and implementation.
- Collaborate with diverse stakeholders: governments, the private sector, nonprofits, etc.

Coalition Experience

WILDCOAST, Los Laureles Canyon, Tijuana, Mexico

With the hundreds of tires collected from the riverbed and adjacent areas, WILDCOAST built a riverside park complete with tire swings and an enclosed fútbol (soccer) field. The project provided the tools - shovels, saws, gloves, etc. - needed by the Los Laureles Canyon community to take the development of local solutions into their own hands.



COMMUNICATIONS, EDUCATION, & MEDIA

Intersecting Guiding Principles

1 3 4 8 10

Background

River plastic capture projects provide unique access and opportunities for education campaigns, impactful communications, and media engagements. These efforts can help bring awareness to the problem, promote solutions, increase local support, pressure governments to take action, and be a powerful asset for fundraising.

Key Insights

- Recognize the value of traditional and social media engagement and youth education programs.
- Leverage visual storytelling such as public art installations and diverse creative and programmatic approaches.
- Develop a consistent and recognizable style and brand that is tailored to the cultural context and audience.

Coalition Experience

The Ocean Cleanup, GraceKennedy Foundation, & Clean Harbours Jamaica (Kingston Harbour Cleanup Project), Kingston Harbour, Kingston, Jamaica

Globally, the Kingston Harbour Cleanup Project drove awareness of the problem to over 1,000,000 people on average per month on social media by leveraging high-quality visual assets. Locally, the project promoted solutions through interactive youth education programs hosted at an on-site visitor center featuring beautiful murals and artwork made from captured plastic.



💰 FUNDING & BUDGET

Intersecting Guiding Principles

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Background

Comprehensive financial planning and management for river plastic capture projects is a complex undertaking that requires detailed attention and forethought. Plan to secure financial support from a combination of sources, and budget for the long-term with contingency for unexpected expenses.

Key Insights

- Secure funding upfront for sustainable long-term operations and maintenance, when possible.
- Incorporate contingency funds into the budget for unexpected costs and expenses.
- Pursue multiple funding sources and strategies to build financial resiliency.

Coalition Experience

Chemolex Company Limited, Athi River, Nairobi, Kenya

Instead of relying exclusively on traditional sources of funding like grants, donations, and awards, Chemolex Company Limited used captured plastic as feedstock material to manufacture paving bricks and other construction materials. These products were then brought to market and sold to support project operations.

