



NO MICROPLASTICS, JUST WAVES.

- LIFE Blue Lakes-
Lake Paper – Recommendations for action for
municipalities to reduce (micro-)plastics
Within the framework of the project "Blue Lakes"



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Lake Paper

A charter for lakes and rivers in struggle against microplastics

Lakes and microplastics

Lakes are drinking water reservoirs, complex ecosystems and habitats for a variety of animal and plant species and popular recreational spots. The requirements and usage demands on lakes are therefore very different. On the one hand, lakes should be accessible to people; on the other hand, they also need areas of unspoiled nature. What is a common desire is for clean water, whether for drinking, recreational activities or as a habitat. The unique "lake ecosystem" is particularly worthy of protection and requires a lot of attention to avert hazards and avoid pollution.

Waste along lakes or rivers can become a serious threat to water quality, the ecosystem and health. Microplastics are one of these sources of danger. Microplastics are not an exclusive problem of the oceans, but are also present in terrestrial ecosystems and usually originate there. Pollution by microplastics has already been detected in all waters and poses a serious, invisible threat that must be countered with various measures.

The Lake Paper presented here describes the causes of microplastic pollution, proposes measures to prevent microplastics and how citizens can be made aware of and informed about the problem. It is aimed at municipalities, districts, regional authorities and social groups and offers assistance by means of a catalogue of measures to prevent microplastics and a voluntary commitment to engage in the fight against microplastics. The Lake Paper is a result of the EU-LIFE project Blue Lakes, which is being implemented in cooperation with project partners from Italy and Germany. It is based on comprehensive research on microplastics, interviews with experts and the results of round tables at the German project lakes Lake Constance and Lake Chiemsee, which were organised by the Lake Constance Foundation and the Global Nature Fund.

Microplastics are everywhere

There are many different types of waste along water bodies. These wastes have different effects on ecosystems. Plastic waste is one of the most persistent human pollutants transported across terrestrial to marine environments. 80 percent of the



plastic waste detected in the ocean originates on land. Along coastal regions, for example, it ends up directly in the lake via wind drifts or is transported from inland areas via rivers into the oceans. Plastic waste is always of human origin!

Microplastics are divided into two groups, according to their primary or secondary origin. Plastic can range in size from many metres to nanometres. The smaller the fragments, the more difficult it is to identify, quantify and completely remove them. Plastic waste not only persists in nature for a long time, but also decomposes into smaller and smaller fragments over time due to the effects of environmental and weather conditions, eventually becoming microplastics, i.e. plastic particles smaller than five millimetres. This microplastic is called secondary microplastic. Primary microplastic, on the other hand, is produced industrially for specific purposes and is used, for example, in agriculture or in cosmetics, as micro pellets or micro beads.

According to a study by the German Federal Environment Agency (UBA 2020), the most significant cause of microplastics is tyre and road abrasion and its leaching into water bodies. Other industries also contribute to microplastic pollution, as various materials such as insulation materials, varnishes or synthetic paints weather and are washed out by rain. Microplastics are sometimes used in cosmetics and cleaning products, or they are produced as fibre abrasion when synthetic clothing is worn and washed. Microplastics thus find their way into lakes and rivers via rainwater and wastewater. The effects on oceans have been studied for many years. Studies on the effects on inland waters, on the other hand, are rather sparse, although microplastics can be detected without doubt in all types of water bodies.

The role of administrations (municipalities, cities and counties) and civil society in the prevention of microplastics

Microplastics are a relatively new and often invisible threat that endanger our fragile ecosystems and the exact and long-term effects are still largely unexplored. It can be assumed that lakes in particular react very sensitively, as this is where the particles can accumulate. Therefore, there is a growing social awareness to avoid microplastics and the sources of microplastics. Municipalities along rivers and lakes have a decisive role to play here.





The EU-LIFE Project Blue Lakes

In the EU-LIFE project Blue Lakes, seven project partners from Italy and Germany are working to reduce microplastic inputs into lakes. The focus is on developing concrete recommendations for action for municipalities and supporting them in preventing microplastic pollution and its sources. A central tool of the project is the lake paper developed in the five pilot regions in Italy and Germany. In Germany, the lake paper was elaborated exemplarily at Lake Constance and Lake Chiemsee and is transferable to other lake regions. It is intended to support municipalities in implementing concrete measures and presents strategy proposals on how to tackle the challenge of microplastics. The lake paper is divided into a voluntary commitment, an implementation matrix and a comprehensive list of examples.

The primary addressees of the project are public institutions, interest groups and citizens. In a project-accompanying dialogue process with relevant economic sectors, information is provided on how plastic and microplastics can be reduced and which alternatives are available for the different sectors. In addition, various (municipal) measures, training, technological developments in wastewater treatment plants and suitable monitoring systems are presented. Information and awareness-raising work supports the avoidance of plastic and microplastics via different communication channels in social and classic media. The EU LIFE Blue Lakes project is implemented in Germany by the Global Nature Fund and the Lake Constance Foundation.





Description and handling of the matrix

The matrix (see appendix) is intended as an effective implementation aid for reducing and avoiding the causes of plastic waste and microplastics. However, it is not a binding part of the voluntary commitment.

The 5 R principle for waste avoidance:

Rethink - means re-evaluating and assessing waste generation. It calls for finding new ways (not other materials as an alternative!) to avoid waste.

Refuse - means regulatory interventions to avoid waste.

Reduce - means to reduce used, unavoidable materials.

Reuse - means achieving the highest possible recycling rate, e.g. via deposit systems.

Recycle - means to recycle collected waste and the raw materials from it.

The goal is the careful use of resources through responsible production, consumption, reuse and recovery of products, packaging and materials.

The 5R principle was chosen for the matrix because it can be incorporated into the sustainability strategies of municipalities and is also transferable to the range of tasks of municipal companies, such as waste management companies and technical companies, as well as to municipal administrations.

The matrix is a comprehensive list with a selection of possible individual measures that contribute to the reduction of waste in general and the avoidance of microplastics in particular. It is subdivided into different areas of everyday communal life. In each area, individual measures are described as proposals for action, as well as the respective assignment to the 5 R principle. In another column, the areas of impact are named. These are:

- Public relations
- Technical measures required
- Legal, municipal requirement
- Conceptual approach
- Setting a good example

The effects can unfold over different periods of time. Various measures can be publicly accompanied and thus contribute to raising awareness among citizens.

The columns "prioritisation", "in planning" and "implementation not possible" support the staff in the municipalities and serve as orientation and justification aids towards municipal councils and mayor's offices.





Attached to the matrix is an extensive list of links with good examples that give a first impression of what an action can look like. Contacts can also be found here if further information is needed.

Areas

Below are different areas that can fit into the strategy to prevent plastic waste in municipalities. Examples from the matrix are presented in the individual points. Let yourself be inspired and define your strategy!

1 Inform

Reduce	Refuse	Reuse	Rethink
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One of the main causes of plastic pollution is still a lack of public awareness. How can civil society be better involved and taken along? Under the keyword "inform", ways are described how citizens can be made aware of the issue.

Municipalities have the opportunity to regularly inform their citizens about plastic and microplastics through various media. For example, practical environmental tips can be published at regular intervals in community newsletters and on the community website. Events and background information from local organisations can be linked to the website. The local library can offer a collection of literature on the topic of "plastic-free".

Simple aids, such as enclosed lists in municipal bulletins with information on where in the municipality plastic-free shopping can be done, are a simple low-threshold offer. Local non-packaging shops, bakeries, butcher's shops where you can bring your own containers or snack bars with "to-go" food with reusable offers are supported. The regional economy benefits from this and the mountains of waste shrink.

Or have you already thought about promoting tap water? The safest food in Germany with the highest quality makes every plastic bottle unnecessary.

Advantages for the municipality:

- Low effort and low costs for the implementation of the measures
- Increased awareness and sensitivity of citizens to the environmental issues.
- Listing plastic-free shopping options puts competitive pressure on other suppliers and motivates them to switch to reusable options.
- Lower costs for waste disposal.





2 Campaigning and information work

Reduce	Refuse	Rethink
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Campaigning makes an issue present and touches many areas. It requires a plan and a strategy on how to engage and involve civil society with a common objective.

In order to trigger a cultural change, it is sometimes not enough to just pass ordinances, but it is also important to involve the entire population. Coordinated campaigns or action days, (ideas-) competitions, swap meets or information events are good ways to encourage people in your municipality to get involved and change their thinking. Campaigns help citizens to engage with a topic over a longer period of time and can influence habits.

Young people are becoming more and more environmentally aware and are committed to more climate and environmental protection, e.g. with "Fridays For Future". This is precisely why it makes sense to involve the young generation and address them via modern media. Promote such movements in your community, call for dialogue and create the framework conditions for a continuous exchange. Cooperation with neighbouring municipalities not only serves networking and the exchange of good ideas, but also saves costs in campaigning and in the purchase of information material.

Advantages for the municipality:

- Increased environmental awareness among the population and higher identification of the citizens with their community.
- More acceptance for legal requirements.

3 Environmental education

Reduce	Refuse	Reuse	Recycle	Rethink
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Environmental education is a key to a comprehensive understanding of sustainability. It is not only aimed at children, but can also playfully convey to adults the need for a mindful use of resources. Support environmental education measures for kindergartens, school classes and adults. You never stop learning. Involve schools, teachers, kindergartens, clubs or other educational institutions to put waste prevention on the agenda. Joint project weeks can reach and actively involve many people in your community. Create special incentives and set an example, e.g. with a "plastic-free life" certificate of recognition created for this purpose. Companies are also happy to join such campaigns. Talk to them.





Advantages for the municipality:

- Increased environmental awareness among the population and higher identification of citizens with the issue.
- Children and young people bring the topic of waste prevention into families and motivate adults to take action.

4 Plastic-free (weekly) market



A plastic-free (weekly) market offers a variety of possibilities to reduce plastic and is suitable for communication with citizens. Simple measures such as a common logo for stalls participating in the campaign or voluntary participation with a reusable initiative for food stalls help to reduce waste.

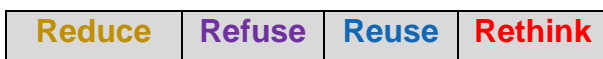
The market stalls can be supported communally to expand the plastic-free offer at the weekly market. For example, start a collection campaign of unused cotton bags to bring them to the people. Each collected cotton bag replaces plastic bags and can be used several times.

Advantages for the municipality:

- Lower costs for waste disposal after events
- Increased attractiveness through the reusable offer leads to more customer loyalty as well as new customers from the surrounding area.
- A common plastic-free logo leads to more identification with regional products.

5 Gastronomy

(also snack bar, kiosk, bakery, butcher's shop, "break snack stations")



Snacks are passed over the counter every day. Packaging could be plastic-free, uncoated or avoided altogether. Municipalities can inform snack bars, butchers and bakeries about alternatives. Many snacks could also be consumed on site, thus avoiding waste. A reusable system for to-go food and drinks saves large amounts of packaging waste. Municipalities could support local businesses in switching to a reusable system with a support programme and create incentives here. A support





programme also offers the opportunity to concentrate on a few reusable systems. This simplifies the return process for customers and can save costs, e.g. by merging several companies.

Have you heard how the University City of Tübingen does it? Maybe that's also a path you want to take. It works!

Advantages for the municipality:

- Lower waste disposal costs by reducing to-go packaging.
- Increased attractiveness through the reusable offer leads to more customer loyalty as well as new customers from the surrounding area.
- A support programme accelerates the changeover to reusable packaging and offers steering options for the selection of reusable systems.
- The listing of all reusable to-go offers on the municipal website is image-enhancing and also motivates other suppliers to switch to reusable systems.

6 Tourism



"Plastic-free Lake Chiemsee" or "Plastic-free (name of city)" - that sounds good! As a signboard and quality certificate for a region or municipality, it is an award and communicates cleanliness and untouched nature to visitors. In order to spread this message, exchange information with tourism providers and service providers, such as tourism promoters, surfing, sailing, boat and bicycle rental companies, harbour operators, shipping companies or water sports associations. Encourage cooperation. Tour operators will then be happy to draw attention to your region, town or municipality.

Advantages for the municipality:

- Lower costs for waste disposal at tourism hotspots
- Increased attractiveness of the region as a tourism destination and improved image.
- A common plastic-free logo as a regional brand. Identification of regional products by visitors.

7 Accommodation (campsite, hotel, holiday home)





With the support of tourism associations (e.g. Ecocamping), information and education can be provided. Explanations and suggestions can increase the motivation to avoid waste. Hotels and campsites can save costs in this way. Hotel and campsite operators should be encouraged to switch to plastic-free products and reusable systems for the catering area and in sanitary facilities and bathrooms. Guests have time to think about environmental issues during their holidays. The proportion of tourists who value sustainable holidays is increasing. In a survey conducted in 2021, 84 percent of travellers worldwide said that they would like to avoid waste more in the future for reasons of sustainability. Explanations about the share of the tourist tax that has to be spent on costs for keeping shore areas clean creates understanding.

Advantages for the municipality:

- Lower costs for waste disposal
- Increased attractiveness of the region as a tourism destination and improved image.
- A common plastic-free logo as a regional brand.

8 Company



The municipality can offer to establish a platform for cooperative environmental protection for local companies and thus facilitate the exchange between business, politics and administration. Municipalities can offer environmental partnerships and accompany and support the prevention process in different areas. Another possibility to accumulate knowledge and to accelerate knowledge and implementation processes is offered by "coopetition", i.e. companies and traders of the same sector, which are actually in competition with each other, work on the same topic. A local or regional "Zero Plastic Industry Initiative" could be launched by an industry association or the Chamber of Commerce and Industry.

Advantages for the municipality:

- Creating locational advantages for companies that can prove in the production chain that they avoid waste in general and microplastics in particular.
- Less waste in the industrial estate

9 events





There are now numerous ways to make even large events plastic-free. You should include a paragraph in the general terms and conditions for the organisation and participation in events and in the municipal market regulations that food and beverages for consumption on site may only be offered in depositable or reusable packaging or containers. Specifications for reusable packaging can also be made for the to-go area.

Dishwashers and crockery can be provided and rented for events and celebrations. Depending on the size of the municipality, it makes sense to join forces with neighbouring municipalities to purchase a dishwashing mobile or to hire a service provider. In both cases, establish a fee ordinance for use by exhibitors. A uniform deposit system for dishes facilitates implementation. Draw attention to your commitment. A sign at the entrance to the event area and also in the announcement of the event can explicitly state that the event is plastic-free. This creates awareness for the topic among visitors.

Advantages for the municipality:

- Lower costs for waste disposal after events
- Clear environmental education signal to the visitors
- Municipalities can advertise and create a modern impression through targeted communication of plastic-free events and consciously emphasise their pioneering role.

10 Waste disposal



Do you know what goes in the bin? Germans were once considered masters of waste separation. Nevertheless, there is often misdirection in the various waste bins. This increases the cost of disposal and reduces the recycling rate. Therefore, municipalities must regularly inform their citizens what belongs in which bin. A list on the municipality's website or an app from the waste management company can provide answers to citizens' questions. Possibly, further links can be included. A quiz or a commercial can be used to raise awareness of the issue. Regular notices in the municipal bulletin are also a good way to draw attention to what is right and wrong. But beware: information that is too extensive and confusing can have the opposite effect. A short tip per week increases attention and raises awareness. Tips on how to avoid





waste in the household are also useful! Regular monitoring reports from the waste management companies awaken sporting ambition and motivate. Try it out.

Advantages for the municipality:

- Lower costs for waste disposal
- Increased awareness among citizens about waste disposal and waste prevention.

11 Sewage treatment plants

Reduce Refuse Rethink

Sewage treatment plants play a central role in wastewater treatment and in the fight against microplastic inputs into rivers and lakes. In the future, sewage treatment plants will have to provide this service according to European regulations and also remove microplastics in addition to the other treatment services. Sewage treatment plants that are operated on an inter-municipal basis will need large investments in an additional treatment stage for this purpose. This must be considered and planned for in the operation. The consequences for the citizens will be financially noticeable. Inform them in good time.

For the best possible preparation for a changed legislature, it is advisable to provide further training for those responsible for and working at wastewater treatment plants and to learn about new technologies at an early stage. Make these trainings possible. The EU-LIFE project Blue Lakes and the project partners in Germany and Italy present newly developed filter technologies and monitoring systems that make the extraction of microplastic particles from municipal wastewater even more efficient. Find out more on our website or sign up for our newsletter.

In addition, ask your fellow citizens to help prevent microplastics. Each individual can contribute to reducing the amount of microplastic particles in everyday life. List concrete tips on the municipal website and in the municipal bulletin on how citizens can reduce the production of microplastics, e.g. from cosmetics and cleaning products, when washing synthetic clothes or in road traffic.

Advantages for the municipality:

- Professional exchange and information from experts from your municipality on the latest technologies in wastewater treatment

12 Agriculture, horticulture





In agriculture and horticulture, thousands of tonnes of used agricultural film are produced every year and have to be disposed of. Improper disposal and residues left in the soil decompose and are carried away via surface water. Careful removal of the films is the first important step. Instead of incinerating them after complete removal, take-back concepts must be developed. This way, enormous amounts of raw materials can be made usable again through recycling, CO₂ can be saved and microplastics can be avoided. The same applies to canisters. Set up a collection point together with your neighbouring municipalities or make it possible to hand in the films and canisters at the recycling centre at low cost. In principle, the legislator must prohibit the spreading of sewage sludge on agricultural land. In addition to the microplastics filtered out of the wastewater, this also contains other pollutants that should not be reintroduced into the natural cycle.

Advantages for the municipality:

- Less waste from the agricultural and horticultural sectors
- Healthier soils
- Energetically utilised sewage sludge can be used directly for energy generation at the sewage treatment plant or excess thermal energy can be fed into a municipal heating network.

13 Building renovations



Set a good example! Synthetic insulation boards and insulation materials can release particles due to weather conditions. Plastics in façade paints (biocides) and exterior plaster are also washed out during heavy rain events. The use of natural insulation materials in public buildings can be stipulated in tenders. Take the opportunity and communicate the measures. Furthermore, there is the possibility to make corresponding specifications for the entire new building area and thus focus on the value of ecological living and the advantages of avoiding microplastics.

Advantages for the municipality:

- Ecological building increases the well-being of building users
- Improved image for the municipality

14 Sports





It may come as a surprise how many sources of (micro)plastic exist in sport. Sports clubs can actively influence their members and motivate them to avoid plastic waste. An environmental officer for the club would be a concrete contact point for the members and at the same time a "caretaker" to initiate activities. The person in charge should be a member of the board to have a say and responsibility. Sports federations have already taken up the issue and support their member clubs with information material.

Especially with regard to microplastics, artificial turf fields play an important role. The turf surfaces are usually filled with microplastic granulate. Improper maintenance, clogged collection grooves during rain events or lack of brushing-off stations for sports shoes transport the granulate. Inform those responsible for care and maintenance and carry out regular checks. For new installations, an alternative infill material can be used.

There is also an increased sensitivity to water pollution of all kinds in water sports. Members of fishing clubs, sailing, rowing or canoeing clubs are interested in the topic and can serve as multipliers. When choosing products such as varnishes and antifouling, look for "microplastic-free".

But water sports clubs can also support the fight against pollution in a completely different way. Apps such as "Plastic Origins" by Surfriders Europe map points along lakes and rivers and can be downloaded free of charge. An evaluation of the recorded waters shows where a particularly large amount of litter accumulates. This helps with collection campaigns and supports disposal companies in tracking down the rubbish quickly.

15 Plastic-free city / municipality



Your new goal "Plastic-free city"! Inform, raise awareness and create incentives!

Make full use of the regulatory framework you have as a municipality and do not shy away from public reactions. Every waste avoidance saves the budget, whether in procurement or disposal. In the long run, you will prevent harmful consequences for your fellow citizens if the environment remains free of waste and the causes of microplastics are avoided.

Set a good example. Technical measures are available in many areas. Find your own concept and strategy to become a plastic-free municipality. The Lake Constance





Foundation, the Global Nature Fund and specialised organisations like the Plastikfreie Stadt e.V. support you.

Advantages for the municipality:

- When participating in initiatives such as those of Plastikfreie Stadt e.V., municipalities receive a fee-based but very intensive support in the implementation of various measures.

Contact



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Voluntary commitment to reduce and prevent microplastic and plastic waste pollution in and around lakes

Cities and municipalities are committed to reducing microplastics and plastic waste pollution in lakes and water bodies:

- Signatories commit to help protect lakes and other water bodies from plastic waste and microplastic pollution and to take action to prevent it.
- The signatories aim to take effective measures to reduce the input of microplastics and the volume of waste to water bodies by (date) _____.
- The signatories commit to lead by example and reduce the general amount of waste and especially the amount of plastic waste in the municipality.

With this voluntary commitment, the signatories are making a contribution to the protection of Lake Chiemsee.

The signing cities and municipalities become part of a network of committed microplastic-free lake communities. With careful planning and the implementation of measures in the different fields of action, they support the goals of the EU-LIFE project Blue Lakes, which is implemented by the Lake Constance Foundation and the Global Nature Fund at Lake Chiemsee.

One year after signing, the signatories take stock and have the opportunity to exchange and benefit from each other's experiences.

The explanatory Lake Paper, a matrix with a selection of possible individual measures and a comprehensive list of links support the municipalities in their implementation.

Place, date _____

Place, date _____

Signature of authorised signatory of the municipality:

Name:

Function:

Signature

Lake Constance Foundation / Global Nature Fund





Suggestions for successful implementation:

By signing the voluntary commitment, a first step has been taken to tackle the microplastic and related plastic waste problem. Measures to protect the waters are necessary and urgent. In the following, you will find suggestions on how to implement them:

- Put the issue on the municipal agenda. A theme year dedicated to the prevention of plastic waste and the causes of microplastics creates the opportunity to become active in many areas of everyday community life.
- A timetable of when, how and with which target groups a realisation is planned supports the procedure.
- The matrix supports you in the selection of measures that are suitable for your municipality. Enter the time frame in which the measures are to be implemented. Every measure counts, be ambitious but realistic.
- Note that when implementing measures to protect lakes from plastic inputs and microplastics, conflicts of objectives may arise, e.g. when it comes to involving groups with different interests. Here, it is important to strengthen the exchange between civil society groups. Continuous communication with representatives of interest groups and citizens facilitates the development of proposals for preventive measures. A sustainability officer can be a contact person.
- Find community ambassadors who care about tackling the causes of microplastics and describe what they have done. You can use the different areas as a guide.
- The exchange between the signatories supports the formation of a network (e.g. regular round tables) and helps to share ideas and good approaches. It is desirable to dock with institutionalised networks or committees that already deal with environmental aspects of lake protection.
- The voluntary commitment remains open for further signatories and is transferable to other lake regions.
- Communicate your plans. It is easy to find like-minded people who can share their experiences and support you in implementing them.

Link to the project: <https://lifebluelakes.eu/de/>

Appendix

- Matrix with individual measures
- Link list to examples (only available in German)



Blue Lakes - Lake Paper Matrix 1

[illegible]

						Packaging tax	Legal/municipal requirement			
						One-way ban	Legal/municipal requirement			
Blue Lakes - Lake Paper Matrix 1										
Area	Reduce	Refuse	Reuse	Recycle	Rethink	Measures and description (further info and links in matrix 2)	Sections	Prioritisation	In planning (short-term = k; long-term = l)	Implementation not possible (x)
						Voluntary participation, reusable systems (reusable deposit systems, own containers)	Legal/municipal requirement Conceptual			
						Logo for stand operators participating in the action	Conceptual Public relations			
						Bonus system Raffle of a sustainable shopping tour	Conceptual Public relations			
						Motto: Shopping like 25 years ago.	Conceptual Public relations			
						Information stand	Public relations			
						Handing out cotton shopping bags, Reusable deposit jars with screw cap, etc.	Conceptual Public relations			
5 Gastronomy, also snack bar, kiosk, bakery, butcher's shop ("break snack stations")										
						Packaging tax	Legal/municipal requirement			
						Disposable Ban To Go	Legal/municipal requirement			
						Ban on disposable food and drinks consumed on site.	Legal/municipal requirement			
						For on-site consumption, the snack can be served on reusable tableware. become.	Legal/municipal requirement			
						Voluntary participation, reusable systems (reusable deposit systems, own containers)	Legal/municipal requirement Technical measure			
						Info event for restaurateurs on the topic of plastic waste-Avoidance	Legal/municipal requirement			
						Plastic-free and uncoated alternatives	Legal/municipal requirement Setting a good example			
						Support the gastronomy sector with subsidies for the introduction of reusable deposit systems; a uniform deposit system is beneficial.	Legal/municipal requirement Conceptual			
						Offer tap water in carafes	Conceptual Public relations			
6 Tourism										
						Infrastructure against littering: Place sufficient rubbish bins; Drinking water dispenser	Technical measure			
						Unpacked camping supermarket, Strengthening regional products	Public relations Setting a good example			
						Inform, educate, see also area 1	Public relations			

						Educational work on holiday. Information material for operators of camping sites, holiday flats, hotels.	Public relations			
						Awareness campaign for holidaymakers, explanation on city cleaning along lakes. What can each individual do.	Public relations			
						Reusable systems as an alternative; see areas 3+4	Legal/municipal requirement Conceptual			

Blue Lakes - Lake Paper Matrix 1

Area	Reduce	Refuse	Reuse	Recycle	Rethink	Measures and description (further info and links in matrix 2)	Sections	Prioritisation	In planning (short-term = k; long-term = l)	Implementation not possible (x)
						Plastic-free label, certification	Public relations Setting a good example			
						Port operators, shipping companies, water sports clubs, Involve boat/board rental companies	Public relations Setting a good example			
						"Garbage Police" / Parking Ticket	Legal/municipal requirement Public relations			
7 Accommodation (campsite, hotel, holiday home)										
						Infrastructure against littering: Place sufficient rubbish bins; Drinking water well	Technical measure			
						Unpacked camping supermarket, Strengthening regional products	Public relations Setting a good example			
						Inform, educate, see also area 1	Public relations			
						Educational work on holiday. Information material for operators of camping sites, holiday flats, hotels.	Public relations			
						Awareness campaign for holidaymakers, explanation on city cleaning along lakes. What can each individual do.	Public relations			
						Reusable systems alternatives; they areas 3+4	Legal/municipal requirement Conceptual			
						Plastic-free label, certification	Public relations Setting a good example			
						"Garbage police" / tickets e.g. for organic waste in plastic bags, Dog waste bags etc.	Legal/municipal requirement Public relations			
8 Company										
						Platform for cooperative environmental protection and the exchange of Business, politics and administration, e.g. IHK	Conceptual			
						Coopetition	Conceptual			
						Plastic-free company: Plastic - inventory, avoid, replace	Conceptual			
9 Events, festivities										
						Information events for plastic-free festivals	Public relations			
						Local events without disposables	Public relations Legal / municipal requirement			
						Reusable containers for events on public property	Conceptual			

						Brochure / Guide for Sustainable Events	Conceptual			
						Mobile tableware / reusable tableware	Technical measure			

Blue Lakes - Lake Paper Matrix 1

Area	Reduce	Refuse	Reuse	Recycle	Rethink	Measures and description (further info and links in matrix 2)	Sections	Prioritisation	In planning (short-term = k; long-term = l)	Implementation not possible (x)
10 Waste disposal										
						Weather-proof waste disposal for private households (e.g. yellow bin, instead of yellow bag)	Technical measure Conceptual			
						Information material for the bin (stickers in several languages)	Public relations			
						Spot checks Controls	Legal/municipal requirement			
						Weatherproof municipal waste collection points/ transfer areas	Technical measure Conceptual			
						Public rubbish bins, also in residential or commercial areas	Technical measure			
						Proper disposal of dog waste bags	Public relations			
						Improvement of the deposit disposable fee at public waste bins	Technical measure Conceptual			
11 Sewage plant										
						4th (+ 5th ?) purification stage	Technical measure			
						Microplastic leaching for wastewater treatment plants with 3rd treatment stage (without technical extension)	Technical measure			
						The stormwater overflow basins must be equipped in such a way that no unfiltered water is released into the water bodies. can.	Technical measure			
12 Agriculture, horticulture										
						Ban on plastic film and plastic canisters for communal Properties. No plastic plant pots	Legal/municipal requirement			
						Information on the limited use of foils in the Agriculture	Public relations			
						Collection and take-back points for used agricultural film and other packaging (canisters, bale twine, etc.).	Conceptual Technical measure			
						Recycling systems for used agricultural films and others Packaging (canisters, bale twine, etc.).	Conceptual Technical measure			
						General ban on the use of sewage sludge for agriculture	Legal/municipal requirement			
13 Building renovations										
						Information on leaching hazards of microplastics from synthetic insulation boards, insulation materials, facade paints, Exterior rendering during (heavy) rain.	Public relations			
						Use of natural insulation materials in public buildings	Public relations Setting a good example			
14 Sport										
						Artificial turf pitches with alternative infill material (e.g. made of sand, cork,	Public relations Legal / municipal requirement			

						olive pits) or without filling				
						Collecting troughs, brushing station as well as organisational, nursing For artificial turf	Conceptual Technical measure			

Blue Lakes - Lake Paper Matrix 1

Area	Reduce	Refuse	Reuse	Recycle	Rethink	Measures and description (further info and links in matrix 2)	Sections	Prioritisation	In planning (short-term = k; long-term = l)	Implementation not possible (x)
						Sporting events without disposables. If possible, provide alternatives so that they can be used without effort.	Legal/municipal requirement			
						Drinking water dispenser at the sports field	Technical measure			
						Exchanges	Public relations			
						Find project/cooperation partners (NABU/schools...)	Conceptual			
						Create guidelines, statutes Appoint an environmental officer for the association	Conceptual			
						Angling awareness campaign on litter prevention an Fishing spots	Public relations			
						Awareness campaign for water sports	Public relations			
15 Plastic-free city / municipality										
						Packaging tax	Legal / municipal requirement Setting a good example			
						One-way ban	Legal / municipal requirement Setting a good example			
						Reusable deposit system (reusable deposit systems)	Legal / municipal requirement Setting a good example			
						Amendments to the Statutes, Guidelines	Conceptual Setting a good example			
						Guideline waste prevention concept	Conceptual Setting a good example			
						Set criteria for public procurement	Conceptual Setting a good example			
						Recognition of cities, municipalities, companies by Label/Certificate Certificate of Recognition	Setting a good example			
						Provide logos, info signs, etc. as templates.	Public relations Setting a good example			
						Important: Positive, funny, original... Messages	Public relations Setting a good example			
						Litter police / "parking tickets	Legal / municipal requirement Setting a good example			
						Installation of drinking water dispensers				
						Ideas Roundtable	Public relations Setting a good example			
						Transnational Citizen Science Action	Public relations Setting a good example			

						Continuous campaign work	Public relations Setting a good example			
						Sign the lakes paper	Public relations Setting a good example			

Blue Lakes - Lake Paper Matrix 2	Link list
Area	Examples and further info
1 Inform Tap water/water dispenser:	https://plastik-freie-stadt.de https://www.plasticfree-world.com Öko-Institut e.V.: Publication on reusable systems Guide Without Plastic Life Brochure Congress Plastic Prevention 2021 Recording/natur-vision.de a tip: tap e. V. https://atiptap.org
2 Campaigning and information work Transnational Citizen Science Action:	https://plastikfasten.ch/ Öko-Institut e.V.: Publication on reusable systems Save plastic checklist Greenpeace Avoid pastics - the best tips as a checklist - Nachhaltigkeitsnews.de Reusable Innovation Award - Deutsche Umwelthilfe e.V. (duh.de) buergerprojekte-sustainability-plastic-free www.plastic-pirates.eu/de
3 Environmental education Educational kit for schools: Certification KiGa, School: Quiz: Video for children: Tap water/water dispenser:	guide_communal_waste_prevention verbraucherzentrale.de/muell-richtig-trennen- www.atiptap.org/bildung Teaching material on packaging waste and environmental protection - Lehrer-Online Plastic-Free School - Forum Plastikfrei (forum-plastikfrei.de) https://www.swr.de/home/quiz-muell-trennen-100.html https://www.kindernetz.de/wissen/recycling-quiz-muelltrennung-100.html https://www.youtube.com/watch?v=RsjZh2vCvno a tip: tap e. V. https://atiptap.org
4 Plastic-free (weekly) markets City examples:	Plastic-free weekly market News from the Office of the City of Dornbirn https://www.plastikfrei-pfaffenhofen.de/ pfaffenhofen plastic-free-I-am-there weekly market https://www.hanau.de/freizeit/maerkte/wochenmarkt/index.html Plastic-free-weekly-market-in-hanau Munich/oktoberfest-the-wiesn-waxes-the-litter-is-reducing Marburg civic-projects-sustainability-plastic-free Stuttgart-the-weekly-market-should-be-plastic-free
5 Gastronomy, also "break snack stations" City examples: Information event for restaurateurs: Overview of reusable systems:	https://plastik-freie-stadt.de https://www.duh.de/mehrweg-innovationspreis Packaging tax - Universitätsstadt Tübingen Öko-Institut e.V.: Publication on reusable systems Augsburg coffee-to-go-now-in-a-deposit-cup Marburg Civic Projects-Sustainability-Plastic-Free Kreis-konstanz/singen/with-refillable-cups-against-litter https://www.kirchheim-teck.de REUSABLE SYSTEMS FOR TAKEAWAY FOOD IN GERMANY
6 Tourism Overview of reusable systems: Tap water/water dispenser:	https://eu-ecolabel.de/ https://www.sueddeutsche.de/leben/tourismus-wie-sich-plastikmuell-auf-reisen-vermeiden-laesst-dpa.urn-Plastic waste - poison for nature and for the tourism business (wwf.de) REUSABLE SYSTEMS FOR TAKEAWAY FOOD IN GERMANY a tip: tap e. V. https://atiptap.org
7 Accommodation Tap water/water dispenser:	https://ecocamping.de/projekte/eu ecolabel Plastic waste - poison for nature and for the tourism business (wwf.de) https://www.plastikfreie-unternehmen.de a tip: tap e. V. https://atiptap.org
8 Company E.g. platform for cooperation and exchange: Example Coopetition: Example: Culture and Event Hall Zug/CH:	https://www.plastikfreie-unternehmen.de https://plastik-freie-stadt.de https://www.hamburg.de/umweltpartnerschaft https://www.dm.de/unternehmen/nachhaltigkeit-im-unternehmen/rezyklatforum-159306 https://chollerhalle.ch/plastikfrei/

9 events	Guide waste prevention concept: City examples: Information event for restaurateurs: tap water/water dispensers:	https://www.oeko.de/publikationen/p-details/muellvermeidung-in-kommunen-stmu.bayern.de/leitfaden-kommunale-abfallvermeidung bmu.de/publikation/leitfaden-fuer-die-nachhaltige-organisation-von-veranstaltungen Packaging tax - University City of Tübingen Filderstadt.de plastic-free Munich/oktoberfest-the-fairy-waxes-the-waste-is-reduced Marburg Citizen-Projects-Sustainability-Plastic-Free Kirchheim-teck.de a tip: tap e. V. https://atiptap.org
10 Waste disposal	UBA poster	https://www.muelltrennung-wirkt.de/muelltrennung-richtig/ https://www.umweltbundesamt.de/poster_wir_trennen_unseren_abfall.pdf
11 Sewage plant		https://www.replawa.de/aktuelles/
12 Agriculture, horticulture		https://www.erde-recycling.de (Nationwide collection points can be found via homepage) https://newsroom.kunststoffverpackungen.de/2019/05/14/agrarfolien-erde-recycling-erfolg/ https://www.rigk.de/ruecknahmesysteme/ruecknahmesysteme-endkunden/detail/pamira-system Switzerland: https://www.bauernzeitung.ch/recycling-agricultural-films
13 Building renovations		www.duh.de/projekte/nachhaltige-waermedaemmung/
14 Sport	Tap water/water dispenser:	DOSB Recommendations for action on plastic turf systems DOSB Faktenpapier Fuellstoffe in Kunststoffrasensystemen.pdf Ministry of the Environment BW: Mikroplastik-im-Spiel a tip: tap e. V. https://atiptap.org
15 Plastic-free city / municipality	Overview of reusable systems: tap water/water dispensers:	https://plastik-freie-stadt.de https://www.plastikfreie-unternehmen.de/ Reusable Innovation Award - Deutsche Umwelthilfe e.V. (duh.de) Öko-Institut e.V.: Publication on reusable systems bmw.de/general-administrative-regulations-for-procurement-of-climate-friendly-services DUH Für plastikfreie Städte und gegen Einweg-Müll (For plastic-free cities and against single-use waste) https://wupperinst.org/zero-waste-muenchen Umweltleitfaden-2019.pdf (hamburg.de) REUSABLE SYSTEMS FOR TAKEAWAY FOOD IN GERMANY a tip: tap e. V. https://atiptap.org
City examples	Packaging tax statute Tü:	Packaging tax - Universitätsstadt Tübingen https://www.gehtohne.de/muell/einwegsteuern-auf-plastikgeschirr-in-tuebingen/ https://www.tuebingen.de/gemeinderat/vo0050.php? kvonr=14801 https://kasselplastikfrei.de/ Waste prevention at the LH Munich Kreis Konstanz/singen/with-refillable-cups-against-waste Augsburg coffee-to-go-now-in-deposit-cups https://plastikfasten.ch/ https://rathaus.rostock.de/meldungen/314063 https://www.kirchheim-teck.de/Klimaschutz/Agenda-Gruppe-Klimaschutz Kirchheim Teck plastic-free-showcase-town Munich/oktoberfest-the-wiesn-waxes-the-litter-is-reducing
General	A comprehensive assessment of solutions to curb plastic pollution of the oceans Plastic-free-Conference	https://www.pewtrusts.org/- /media/assets/2020/07/germanbtowsingleshi.pdf https://www.plasticfree-world.com
Sources:		https://de.statista.com/_umfrage-zur-umsetzung-von-nachhaltigkeit-unter-reisenden-weltweit https://www.umweltbundesamt.de/mikroplastik-entwicklung-eines-umweltbewertungskonzeptes.pdf https://www.umweltbundesamt.de/eu-plant-beschaenkung-der-verwendung-von-mikroplastics