Eastern NC Beach Clean-up Initiative

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Location: Carolina Beach

Overview-

We propose the installation of Beach Basket Clean-up Stations at multiple beach access points along Carolina Beach to encourage voluntary beach clean-up efforts by the community and visitors. The program will offer reusable recycled plastic baskets that beachgoers can borrow to collect litter, helping reduce pollution and protect the marine environment. We hope to test pilot locations with the goal of expanding across additional eastern NC coastline locations. This would be the first initiative; Carolina Beach would act as our pilots for this program.

Project Objective-

To promote environmental stewardship and reduce shoreline litter by engaging the public in hands-on clean-up efforts through a simple, accessible system of baskets, signage, and waste-disposal bins.

Research: The Link Between Beach Trash and Ocean Plastics Pollution

Beach litter is a direct contributor to the growing crisis of ocean plastics and marine pollution. Trash left on coastal shorelines, especially plastics, is often swept into the ocean by wind, tides, and stormwater runoff. Once in the marine life, these materials break down into microplastics, pose hazards to marine life, and contribute to broader ecological and economic damage.

Key Findings:

1. Shoreline Litter is a Major Entry Point for Ocean Plastics

- According tp landmark study published in Science, approximately 8 million metric tons of plastics waste ever the ocean annually, and a significant portion of this comes from land-based sources, especially through littler on coastlines. (Jambeck et al., 2015)

- Beach litter is often transported by wind into the marine environment. Once in the ocean, it becomes part of the circulation gyres and contributes to floating plastic islands, such as the Great Pacific Garbage Patch.

Key Findings:

2. Plastic Waste Dominates Beach Litter Composition

- Data from The Ocean Conservancy's International Coastal Cleanup revels that the top 10 items collected globally each year are single-use plastic items such as food wrappers, cigarette butts, plastic bottle s and bags.
(Ocean Conservancy, 2022)

- These items are not only unsightly but are lightweight and easily carried out to sea, exacerbating marine pollution

Key Findings:

3. Microplastics From Degraded Beach Waste Pose Long-Term Threats

- Plastics left on the beach degrade over time due to sunlight and mechanical abrasion, turning into microplastics. These tiny fragments infiltrate the food chain when ingested by fish and seabirds.
(Andrady, 2011)

- Microplastics have been found in marine organisms, table salt, and even drinking water, showing how pollution originating on beaches can cycle back to humans.

Key Findings:

4. Local Pollution Has Global Implications

- The United Nations Environment Programme (UNEP) notes that 80% of marine debris originated from land-based sources, including mismanaged coastal waste. This pollution affects marine ecosystems, fisheries, tourism, and human health.
(UNEP, 2018)

Conclusion:

Efforts to reduce beach litter — such as organized cleanups, public education, and waste station access points — are not just local beautification strategies. They are critical environmental interventions that directly prevent the flow of plastics into the ocean. Tackling trash at the shoreline is one of the most effective ways to intercept ocean-bound plastic and safeguard marine biodiversity.

References:

Jambeck, J. R., Geyer, R., Wilcox, C., et al. (2015). Plastic waste inputs from land into the ocean. Science, 347 (6223), 768–771. DOI: 10,1126/science. 1260352

Ocean Conservancy. (2022). International Coastal Cleanup Report. Retrieved from https://oceanconservancy.org

Andrady, A. L. (2011). Microplastics in the marine environment. Marine Pollution Bulletin, 62(8), 1596–1605.

United Nations Environment Programme (UNEP). (2018). Single-Use Plastics: A Roadmap for Sustainability. Retrieved from https://www.unep.org

How it Works:

1. Take a Basket – Beachgoers pick up a reusable basket from the designated stand.
2. Pick up Trash – While enjoying the beach, user collect visible litter and debris.
3. Empty & Return – Trash is emptied into nearby recycling/waste bins and baskets are returned to the stand

Each station will feature a sign with clear instructions:

Take a Basket

Pick Up Trash

Empty & Return

Help Us Keep Our Beaches Clean

Proposed Locations:

Carolina Beach Access Points:

- Hamlet Ave
- Atlanta Ave
- Cape Fear Blvd
- South Carolina

Locations are selected based on foot traffic and proximity to public waste/recycling infrastructure. Most of these accesses already have disposal systems in place for emptying clean up baskets. We would be utilizing the waste disposal bins already provided by the town, and would not provide our own.

Hamlet Ave–

Atlanta Ave–

Cape Fear Blvd–

South Carolina Ave–

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Basket Stand/Post {For 4 stations its $167.64}

Amount needed	Size	Price for one
1	4x4x8’	$10.88
2	2x4x8’	$5.18
2	5/4x4x6x8’	$6.48
Total- 5	-	34.20

34.20
+ 5.00 – Screws
= 39.20
x 1.07 – Tax
= 41.91

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Basket {5 baskets per station}

Amount-	12	12
Price for one-	14.50	14.50
Price for 12-	174.00	174.00
Total:	–	348

348
x 1.07 –Tax
= 372.36