

SWANA's Plastic Waste Reduction Initiative: A Sustainable Path Forward for a Decade

The SWANA International Solid Waste Design Competition (SWDC) 2024



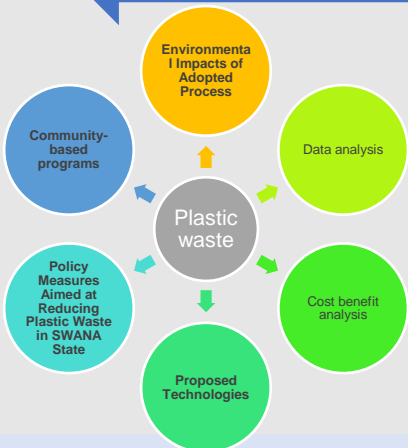
Background

Plastic waste generation in the United States is alarming, with approximately 35,680,000 tons produced annually, constituting 12.2% of the total waste stream. Despite long-standing advocacy for recycling, the efficacy of such programs has been questioned, particularly in the aftermath of China's Operation National Sword in 2017, which imposed strict restrictions on imported recyclables. Economic factors, notably the Producer Price Index (PPI) for recycled plastics, significantly influence recycling programs' viability, with fluctuations in PPI impacting the economic feasibility of recycling initiatives.

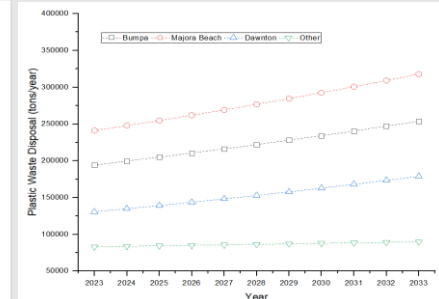
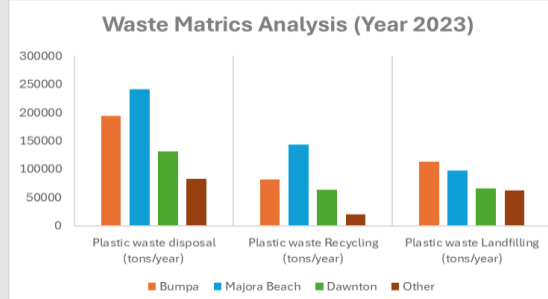
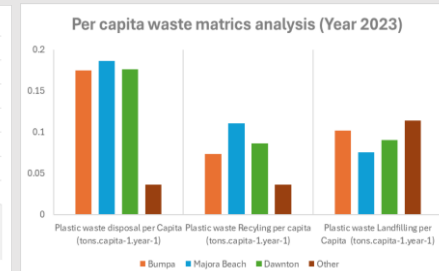
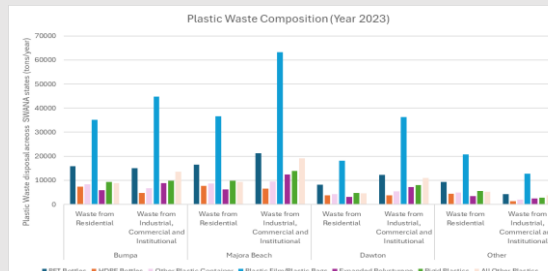
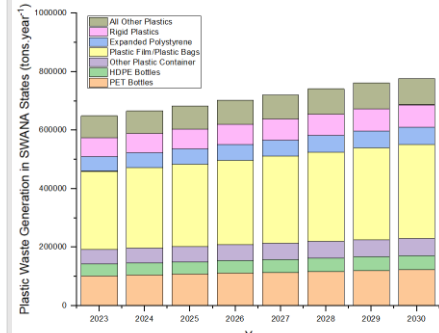
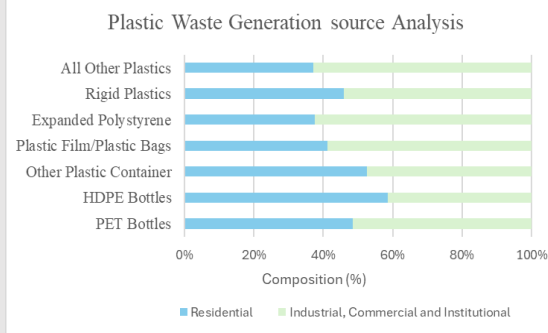
Study Area

- Bumpa- Landfill has not close next 34 years
- Majora Beach-Landfill has 12 years of the remaining capacity
- Dawnton- Landfill has 34 years of the remaining capacity

Overall Process



Result and Discussion



Proposed Technologies

- Preliminary Sorting and Recycling Technology will be deployed in these regions to further enhance the plastic recycling process
- Advanced Sorting and Recycling involves the use of advanced sorting machines equipped with sensors, artificial intelligence (AI), and robotics to efficiently sort and separate different types of plastics from the waste stream
- In addition to recycling efforts, optimizing the operation of the existing WTE facility in Bumpa is crucial for sustainable waste management

Policy Measures Aimed at Reducing Plastic Waste

Policy Measures to Reduce Plastic Wastes in SWANA State

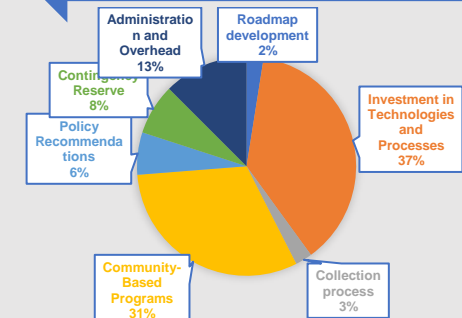


Proposed Technologies and Processes for Plastic Waste Management in SWANA State



Cost-benefit Analysis

Criteria	Amount
Roadmap Development	\$200,000
Investment in Technologies	\$3,000,000
Collection Process	\$200,000
Community-Based Programs	\$2,500,000
Policy Recommendations	\$500,000
Contingency Reserve	\$600,000
Administration and Overhead	\$1,000,000
Total	\$8,000,000



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