

Environmental Resources Planning, LLC

Innovative Solutions to Environmental Challenges

Down East North Carolina Litter Study

Background: Environmental Resources Planning, LLC (ERP), at the request of the American Chemistry Council and their Marine Debris Group (ACC), will conduct a comprehensive study of litter of the Down East area of North Carolina.

Stakeholders: This project will be conducted in coordination with ACC, the Onslow County Solid Waste Department, which services the County's unincorporated areas, and the Institute for the Environment at UNC Chapel Hill, which is studying the use of drones to survey litter.

Proposed Scope of Work: ERP will conduct a comprehensive survey of litter throughout the Down East area of North Carolina, which will comprise the Stump Sound Township areas of Onslow County including Holly Ridge, Jacksonville, North Topsail Beach, Sneads Ferry, Surf City, and Verona. This will include an evaluation of the current solid waste infrastructure, particularly the local convenience centers, the landfill and residential trash collection and disposal.

It will identify in fine detail the precise components of litter, where it is most problematic and how littering is most likely to occur. It will also take into account the proximity of certain types of establishments (e.g. fast food, convenience stores, solid waste facilities, etc.) and how they correlate to litter tallied at each site. Based on this, recommendations will be provided that take these results and this area's unique dynamics into account.

The project tasks include the following:

1. Base Case Litter Survey: before tourism season begins.

During the first week of April, a statistically representative survey of the Stump Sound area, along with a survey of known litter hot spots, will be conducted by senior ERP staff on 30 sites throughout the Stump Sound area of Onslow County. This survey will provide a profile of litter characterization and littering rates attributable to the local population and neighboring populations directly adjacent to the Stump Sound area. It will also help determine the relationship between litter identified and littering hot spots.

2. Seasonal Litter Survey: while local tourism is at its peak.

During the first week of July, a statistically representative survey of the Stump Sound area, along with a survey of known litter hot spots, will be conducted by senior ERP staff on 30 sites throughout the Stump Sound area of Onslow County during the height of the tourist season. These results will yield a profile of litter that will help determine the rates and types of litter most likely attributable to the seasonal tourist population.

3. Solid Waste Management Infrastructure Analysis.

Since the locations, availability, and schedules of the convenience centers likely have a significant effect on littering and the incidence of marine debris in the Stump Sound area, special attention will be paid to the solid waste infrastructure particularly in Holly/Sneads Ferry and Verona. ERP will conduct a separate analysis as to the proximity of illegal dump sites near or adjacent to these drop-off locations.

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4. Drone Litter Survey

ERP will coordinate with and integrate data from the drone litter survey efforts. In addition, support will be provided by an ERP colleague who is a professional drone pilot. The results of the drone survey will be compared to the roadways litter survey. Any differences and/or similarities will be discussed in the subsequent report.

5. Analysis: comparing results of the two litter surveys

After separately evaluating the results of each of the litter surveys, the differences between the data from the two surveys will be analyzed. The implications of these differences will be discussed and will form the basis for actionable recommendations. In addition, the current solid waste management infrastructure, its inadvertent role in the facilitation of littering and how it can be changed to become an effective tool in litter abatement going forward will be addressed.

6. Report

A draft report will be submitted to stakeholders. Any comments and questions will be addressed and integrated into a final report. A PowerPoint will be provided that summarizes the project goals, data, findings and recommendations.

Schedule: This project can begin once the scope and methodology are approved and ERP is given the authorization to proceed. The project is expected to be completed by August 31, 2019.

Budget: The budget for this project is \$50,000 and includes all staff time, travel and related expenses specified in the project task descriptions above. Travel covered by this budget is limited to the two litter surveys. Any additional travel or scope expansions would need to be covered by a contract amendment as agreed upon by both parties. To keep project accounting simpler, invoices are set to coincide with five milestones and their estimated dates.

#	Milestones	Est. Inv. Date	Amount
1	Begin Project Work	Jan 11	\$10,000
2	Complete Survey 1	Apr 8	\$12,500
3	Complete Survey 2	Jul 08	\$12,500
4	Draft Report	Aug 09	\$10,000
5	Final Report	Aug 30	\$5,000
Total			\$50,000

Who We Are: Environmental Resources Planning, LLC focuses exclusively on litter-related research, studies, surveys and technical assessment reports. Our staff led litter surveys and studies in the Anacostia Watershed, Georgia, Honolulu, Maine, Malibu, New Hampshire, New Jersey (2), Oakland, Rhode Island, San Francisco, Santa Monica, Tennessee, Texas (2), Toronto, Vermont and Washington, D.C. in addition to leading Keep America Beautiful's 2009 National Litter Survey and Litter Cost Study. Field crews under our direction have surveyed more than 21 million square feet of roadways and recreational areas across North America. Our senior staff has authored a number of key litter-related publications including "Litter: Literature Review" for Keep America Beautiful. Our litter-related work has been featured in National Geographic, Time and the New York Times as well as on NPR and ABC's Good Morning America.