



**North Carolina Department of Transportation
Value Management Office
Resource Conservation Program**



Recycling and Solid Waste Management Report For Highway Construction and Maintenance Projects



State Fiscal Year 2017-2018





North Carolina Department of Transportation Value Management Office Resource Conservation Program



EXECUTIVE SUMMARY

This report is a summary of the recycling and solid waste management efforts on highway construction and maintenance projects within the North Carolina Department of Transportation for State Fiscal Year 2018 (July 1, 2017 - June 30, 2018) as required by G.S. 136-28.8(g) and G.S.130A-309.14(3). These statutes mandate that the Department prepare an annual report on the amounts and types of recycled materials specified or used in construction and maintenance projects during the previous state fiscal year and review of bid procedures, respectively. The types of recycled materials incorporated into this report would routinely contribute to the consumer and industrial waste streams, compounding the problem of declining space in landfills.

Efforts to utilize recycled and solid waste materials are in response to the requirements of G.S 136-28.8(b) which mandates the Department use recycled materials in highway projects. All applications of recycled materials are to be consistent with economic feasibility, applicable engineering, and environmental quality standards. In addition, the Department continues to comply with Chapter 136 of the General Statutes to encourage the purchase or use of reusable, refillable, repairable, more durable and less toxic supplies and products.

RESEARCH

NCDOT is continuously looking for new and innovative ways to reuse materials, reduce waste, recycle used products, and use products comprised of recycled content. This year, NCDOT became a partner state with the Recycled Materials Resource Center (RMRC). The RMRC is a research-based organization that investigates the best practices and safe use of materials in DOT projects. Through this partnership, NCDOT can propose outreach and research projects for the RMRC to develop. Additionally, we now have relationships with many other state DOTs and can share the successful products, technologies, and processes that promote the reduction of waste from construction and maintenance activities with each other.

BID PROCEDURE REVIEW

The Department continues to review bidding procedures and processes yearly, to encourage the purchase and use of recycled and reusable products and practices in construction and maintenance projects. The newest edition of the NCDOT Standard Specifications for Roads and Structures released January 2018. Specification 104-13 encourages Contractors to not only use recycled or solid waste materials in their projects, but also allows them the opportunity to initiate and develop the use of recycled products and construction methods that promote sustainability. Furthermore, the contractor is required to report to the Value Management Office (VMO) any use of recycled materials by July 1 each year.



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DATA COLLECTION

In SFY 2017, NCDOT introduced an online form for recycled data collection from both NCDOT offices as well as contractors. The process was beneficial for the Department as a whole. However, in an effort to continually improve the Resource Conservation Program and gather the most accurate data available, the VMO personnel met with employees from across the state. It was determined that much of the data on the reporting form could be collected from HiCAMS (Highway Construction And Materials System). HiCAMS is a database utilized during construction projects by Project Managers as a way to aid in contract administration. The database tracks materials used and payments to contractors.

After meeting with the HiCAMS team and determining how the recycled materials could be tracked, a report was formed that can be pulled at any time throughout the year using various parameters of dates, specific Divisions, materials, etc. The HiCAMS information, however, is not conclusive, as maintenance project materials are not included. The online form was adjusted to collect only those materials, so as not to collect double information. The data given in this report was collected through HiCAMS reporting as well as through the online form.



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DATA REPORTED

**North Carolina Department of Transportation
Recycled Products & Solid Waste Utilization in Construction & Maintenance Projects
Fiscal Year July 1, 2017 – June 30, 2018**

Product Category and Description	Usage	Quantity	Unit of Measure
1-Asphalt:			
Reclaimed Asphalt Pavement (RAP)	Asphalt Mix Additive	5,510,000*	Tons
Reclaimed Asphalt Shingles (RAS)	Asphalt Mix Additive	2,290,000*	Tons
2-Organics:			
Mulch	Wood	4,500	Cubic Yards
Mulch	Hydromulch	8,600	Bales
Compost Material	Soil Amendment	5,100	Cubic Yards
3-Coal Combustion Products:			
Fly Ash	Concrete Mix Additive/Fill	8,800*	Tons
4-Concrete:			
Recycled Concrete	ABC/Fill Material/Base Material	3,200	Tons
5-Glass:			
Glass Beads	Pavement Markings	6,800*	Tons
6-Plastic:			
Recycled Plastic Offset Blocks	Guardrail Offset Blocks	280,000*	Each
Recycled Plastic Pipe (All Types and Sizes)	Pipe	144,000*	Linear Feet
Plastic Jugs	Recycled Herbicide Containers	650	Each
Type III Barricades		34,300*	Linear Feet
7-Scrap Tires:			
Tire Sidewalls	Traffic Drum Ballast	58,900*	Each
8-Misc. Materials:			
Guardrail		184,000*	Tons
Wood Posts		15	Each
Signs		209,000	Square Feet
Steel Beams		91	Each
Signal Heads		50	Each
Silt Fence Posts		11,900	Each
Sheet Piles		5,500	Square Feet
Cable Guiderail		991,000	Linear Feet
Sign Posts		9,500	Each
Paint Totes		4	Tons
Recycled Metal Pipe		160	Tons
Scrap Metal		260	Tons

* Data pulled from HiCAMS