

CEAM 2011 AWARDS NOMINATION  
COUNTY PROJECT OF THE YEAR  
(Please Type or Print)

PROJECT TITLE: Reichs Ford Road Improvements, Phase 1

County: Frederick

Location: Reichs Ford Road, from Reels Mill Road to Bartonsville Road

County Project Manager: Jason M. Stitt, P.E.

Engineer (Firm): Nolan and Associates, Inc., Ellicott City, MD

Contractor (Firm): C. William Hetzer, Inc., Hagerstown, MD

Year Completed: 2011

Construction Cost: \$4,847,244.15

NOMINATED CATEGORY:

Small Project (under \$500,000.) \_\_\_\_\_

Mid-Size Project (between \$500,000. and \$5,000,000.) XXXXXX

Large Project (over \$5,000,000.) \_\_\_\_\_

NOMINATED BY: Yau Ming (Robert) Shen, P.E. (Member County Representative)

POSITION: Dept Head, Department of Highways & Transportation

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SECONDED BY: Thomas J. Meunier, P.E. (County, Associate or Life Member)

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Please submit the following:

- A letter of recommendation (no more than three pages in length) describing the project in detail and why you are nominating it. This letter should address overall complexity of the project, innovative solutions to problems that were encountered, innovative use of County staff and funds, how the needs of the citizens were addressed, and cost effectiveness.
- No more than 5 photographs of the project. One must be of the completed project, while the others may be before or during construction.

Projects may only be nominated by a Member County. A Member County may only nominate one project in each category.

CEAM 2011 Awards Nomination  
County Project of the Year, Mid-Size Project (Between \$500,000 and \$5,000,000)  
Reichs Ford Road Improvements, Phase 1, Frederick County, Maryland  
Letter of Recommendation

Background

Reichs Ford Road was a rural collector road in the southeast section of Frederick County that provides an access route between the east side of The City of Frederick and southeast Frederick County and beyond. It also provides the primary access route to the Frederick County Landfill, operated by the Division of Utilities and Solid Waste Management, and the Public Safety Training Facility operated by the Frederick County Division of Fire and Rescue Services. The Average Daily Traffic (ADT) prior to construction was 2,274 on weekdays, and 4,209 on Saturdays, primarily due to residential landfill traffic. Approximately 14.3% of the ADT was attributable to trucks.

Reichs Ford Road was a 20-22 foot wide, two lane rural road, with 7-10 foot wide paved shoulders on approximately 5% of the length of the road, primarily at the entrances to the Landfill. The roadway had several vertical and horizontal curves that did not meet minimum collector road design standards, and inhibited sight distances. Access to the Landfill was not efficient, and there were an increasing number of vehicles, and heavy trucks that were deteriorating the pavement.

Project Details

The project scope was developed to improve 1.9 miles of Reichs Ford Road to the county's standards for a collector road. The roadway was upgraded to include two 11-foot travel lanes with 8-foot paved shoulders where possible. The project started at Reels Mill Road, approximately 1.25 miles south of I-70, and ended at Bartonsville Road. The project included roadway widening and resurfacing, drainage improvements, stormwater management facilities, roadway geometric safety improvements, signing and pavement markings, erosion and sediment controls, maintenance of traffic and associated work. The project was designed by Nolan & Associates, Inc. of Ellicott City, MD, and constructed by C. William Hetzer, Inc. of Hagerstown, MD. Design of the roadway was based on a projected ADT in 2030 of 3,807 on weekdays, and 5,945 on Saturdays, with 14.3 % trucks.

The project added new turn lanes at the landfill entrance to accommodate increased traffic and to allow for more efficient stacking of traffic, out of the main travel lanes. This work was coordinated with Landfill staff to provide maximum efficiency with the least impact to Landfill operations. The intersection with Bartonsville Road was also modified to provide a more perpendicular intersection, with improved sight distances, and separate lanes for right and left turns.

During design, and prior to construction, employees of the Office of Transportation Engineering and the Department of Construction Management and Inspection held several public meetings with the residents within the limits of the project. These meetings were intended to keep the general public and the residents informed of the scope of the project and to update them on the project schedule. Public and resident input was received and, where appropriate, incorporated into the project. The project team also attended regular meetings of the Landfill Neighbors Meeting prior to construction, where an item was added to each agenda for updates on the road improvement project. Attendance at the neighbor's meeting allowed us a forum to provide project updates and answer any residents' questions about the road construction. This allowed for coordination of the road improvement work and any work being planned at the landfill, and also for coordination of the relocation of a landfill landscape berm during the road project, which was planned later by the DUSWM.



In order to accomplish the proposed widening and realignment work, additional right-of-way, and permanent and temporary easements had to be obtained. The Land Acquisition Coordinator for the Division of Public works, as well as the Project Manager, met with each property owner to negotiate R-O-W and easement purchase agreements. An appraisal firm was employed to determine the fair market value for the property required, and offers were made to each property owner. Where it was obvious that agreements could not be reached on a purchase price for a R-O-W or easement without going through condemnation procedures, alternate design options were looked at. Of the 62 properties where R-O-W or easements were necessary, only three were not able to be negotiated based on the original proposed design. Rather than going to condemnation, which could have delayed the project for 1-2 years, the project team modified the project design in one location to eliminate a proposed stormwater management pond by modifying proposed grass ditches to dry swales throughout the project. Approval was obtained from the Division of Planning and Development Review (DPDR), to assure that the modifications to the project met the state and county stormwater regulations. The migration from the originally-proposed regional stormwater management facility (pond) to the series of micro facilities (dry swales) are now the desired practice in the stormwater management regulations adopted after this project was constructed.

There were another two properties where the houses were within 10 feet of the roadway, and the road could not be moved any closer to the houses. The original plan was to purchase each property outright and to relocate the residents. This option was rejected by each property owner, so the roadway design was modified to shift the centerline of the roadway away from these properties, and by reducing the paved shoulder width from 8 feet to 4 feet. In addition, concrete curb and gutter, concrete retaining walls with imprinted and stained sections to simulate natural stone, were employed to protect existing properties, homes and septic systems. This allowed for minimal impact on these two properties.

The Notice to Proceed date for the construction contract was June 18, 2009, with a contract duration of 300 working days, including days added by change orders. The project was completed within 268 working days. The project sequence broke the project down into six successive phases, however, this was modified to allow the contractor to work concurrently on different phases providing they could maintain traffic.

#### Innovative Solutions

1. All of the properties along Reichs Ford Road were on wells and septic systems. Some of the septic systems were close to the proposed roadway, and there was concern that they may be damaged during construction. In order to minimize damage to these systems, the County's Office of Highway Operations excavated test holes and performed percolation tests, with the assistance of the local Health Department. This would typically be performed by consultants, but by using County and Health Department employees, there was a significant cost savings to the project. During the testing, seven septic systems were determined to have potential to be impacted by the construction project. A contingent relocated septic design, and contingency plans for emergency repair, was coordinated through the Health Department at no cost to the county, again providing savings to the project.
2. There were existing overhead and underground utilities along the roadway that needed to be relocated in order to widen the roadway. Typically, this work is done before roadway construction starts. However, arrangements were made with the various utility owners to perform the work in conjunction with the roadway improvements. The advantage of this approach was that the project could start sooner, and work was often performed under the same traffic control, minimizing the impacts on the roadway users.
3. The original design called for a significant fill of approximately 9 feet in one location to correct a vertical curve and bring it into collector road design standards. The original sequence of work involved filling one side of the roadway while maintaining traffic on the other side of the road. This would require extensive traffic control measures, including concrete Jersey barriers, to



protect the fill area and the adjacent traffic. The original project schedule allocated 30 days to this phase of the work. The contractor proposed an alternate method of filling each side of the road in alternate lifts, thereby eliminating the steep drop. This was accomplished under lane closures, with flaggers maintaining traffic. Traffic was allowed to travel on the previous lifts, and at the end of the workday, asphalt millings were spread on the completed fill to protect the surface from rutting and damage by traffic. This method took only 10 days to complete the fill operation, thereby reducing the length of the contract. There was also a cost savings due to the elimination of the concrete Jersey barriers from the traffic control measures.

4. During the improvements to Reichs Ford Road, there was another county project under construction, the Public Safety Training Facility (PSTF), which was located at the Reels Mill Road intersection. This project required improvements to the pavement and the pavement markings at the entrance off Reichs Ford Road, just west of the Improvement project. Rather than have two different contractors performing similar paving work on the same road, possibly at the same time, it was negotiated that the Reichs Ford Road project would add the patching, milling, overlay and pavement markings, to be done at the same time as the final asphalt surface on the rest of Reichs Ford Road. This provided a cost savings to the PSTF project, due to an economy of scale in the asphalt and pavement markings, as well as in traffic control. The paving work was performed under the same traffic control, thereby reducing the impacts to the traveling public. Also, combining the work eliminated one transverse joint in the pavement, which eliminated one source of water entering the pavement and causing premature deterioration of the pavement.
5. The original plan for the improvement project was to remove the entire existing pavement, and reconstruct a new road section with 6" of Graded Aggregate Base (GAB), 10 inches of base asphalt and 2 inches of surface asphalt. It was determined that a significant portion of the existing pavement did not need to be replaced, so these areas were modified to add a wedge and level course and 2 inches of new surface asphalt. This significantly reduced the cost and duration of the project, while still providing the required pavement section. This helped to meet the stormwater management requirements for the project.
6. During placement of the final asphalt surface, the contractor used a material transfer vehicle (MTV) with the normal paving equipment, allowing the paving machine to place the asphalt mat in a continuous operation, without stopping. This method provides a much smoother finished surface while avoiding the typical "bumps" every time a truck backs up to the paver, and reducing transverse surface joints. The MTV also prevents segregation of the asphalt mix during laydown, which can lead to raveling of the asphalt on the surface. The MTV allows the contractor to provide a smoother, higher quality asphalt pavement.

REICHS FORD ROAD @ LANDFILL ENTRANCE



BEFORE



AFTER



REICHS FORD ROAD @ BARTONSVILLE ROAD



BEFORE



AFTER



REICHS FORD ROAD

CONCRETE RETAINING WALL WITH IMPRINTED, COLORED CONCRETE SURFACE



HOUSES IN CLOSE PROXIMITY TO ROAD

