US 17 IMPROVEMENTS PROJECT
COMMUNITY IMPACT ASSESSMENT

UTILIZING STUDENTS TO OVERCOME ECONOMIC AND LITERACY BARRIERS TO PUBLIC PARTICIPATION

Submission Date: November 15, 2003

Word Count: 5,132

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US 17 IMPROVEMENTS PROJECT ABSTRACT
The North Carolina Department of Transportation (NCDOT) authorized the preparation of a Community Impact Assessment (CIA) almost five years after the initiation of the Environmental Impact Statement for the 16.1-mile (25.9-kilometer) US 17 improvements project. The CIA was initiated because of the NCDOT’s concerns about possible Environmental Justice issues. During the preparation of the CIA, the CIA analyst discovered that more than 80 percent of the students at the two elementary schools within the project corridor were from low-income families. Because of the correlation between low-income, low educational attainment and literacy level, the CIA analyst asked the school principals to estimate the literacy of the students’ parents. Both school principals estimated that 30 – 40 percent of the parents of these students were illiterate. These economic and literacy barriers meant that access to traditional public involvement tools such as websites and newspapers was beyond the financial reach of many families because computers, Internet access and newspaper subscriptions were unaffordable. In addition, traditional newsletters and other written materials would prove inadequate as the sole means for disseminating news about the project because of the high level of illiteracy among parents. Utilizing elementary school students as a conduit to their parents, a homework assignment was designed to get project information to and from their parents, especially those parents that were illiterate and/or low-income. As a result of the response from the homework assignment, other non-traditional techniques were developed to use school students in overcoming the barriers of illiteracy and limited income to public participation.
The North Carolina Department of Transportation (NCDOT) authorized the preparation of a community impact assessment (CIA) five years after the initiation of an environmental impact statement (EIS) for the US Route 17 improvements project. The CIA was initiated because of the NCDOT’s concerns about possible Environmental Justice issues. NCDOT had almost a dozen controversial projects that had been delayed. Some of the delays were directly related to Title VI (Civil Rights Act of 1964) actions that had been filed against the projects.

The 16.1-mile (25.9-kilometer) US 17 project was located in rural Jones and Onslow Counties between the coastal cities of New Bern and Jacksonville (Figure 1). This segment was one of 18 segments between South Carolina and Virginia that NCDOT proposed to upgrade to a modern, high speed, multi-lane facility through eastern North Carolina. Three of the projects have been completed, six are under construction and one is in design. The remaining eight projects, including this 16.1-mile (25.9-kilometer) project, are in the planning stage.

The purpose of this project was to widen existing two-lane US 17 to a four-lane divided roadway on new location and/or a five-lane roadway on existing location. This was needed in order to address system linkage, economic development, transportation demand, safety, roadway deficiencies and levels of service issues. The project corridor varied in width from approximately 500 – 3,000 feet (153 – 915 meters) and included approximately 2,600 residents. While many alternatives had been examined and eliminated, twelve alternatives were still considered viable and a preferred alternative had not been selected.

**PROJECT DESCRIPTION**

Initially, the CIA was to examine the potential impacts of the project alternatives on environmental justice populations in four African-American communities, Chadwick, Hatchville, Garnet Heights and Goshen. After the CIA was submitted and reviewed, the NCDOT decided to expand the scope of the CIA to include two additional African-American communities, Murphytown and Oak Grove; three predominantly white communities, Belgrade, Ten Mile Fork and Deep Gully; an integrated town, Maysville; and, a predominantly white town, Pollocksville. All nine communities were located in unincorporated areas adjacent to or near the towns of Maysville and Pollocksville. The expanded CIA was approved by NCDOT in early 2002.

In an attempt to evaluate the potential impacts of the project alternatives on all segments of the population, interviews with 208 residents were conducted in homes, front yards and gardens; under carports and clotheslines; at schools, businesses, a restaurant and a grocery store; at two multi-community meetings in African-American churches; at three voter polling places; at two public citizen informational workshops in a non-minority church in Pollocksville and at Maysville Elementary School in Maysville; and, at Parent Teacher Organization/Association meetings at Pollocksville and Maysville Elementary Schools. In most cases, the CIA analyst conducted one-on-one interviews with community members. By administering the interviews, the barrier posed by illiteracy was significantly reduced. The low-income residents were able to converse effectively.

Each interview took an average 15 minutes to complete and cost an average of $15 each. In total, the interviews took approximately 52 hours to complete at a cost of approximately $3,120. Dividing the interviews by community, creating summaries for the CIA, etc. took an additional 15 minutes each and cost an additional $3,120.

The interviews revealed that, while many residents had a general knowledge of the project, the majority of the African-Americans interviewed knew little if any specifics about the project. In fact, most had not received the project newsletter. Prior to initiating the CIA, the
project’s outreach efforts had consisted of two public involvement workshops (one inside the project corridor and one approximately 15 miles from the project corridor), periodic newsletters and a toll-free telephone number.

In an attempt to get information to the African-American communities, the CIA analyst examined churches as a potential gateway. The absence of churches in some communities, the variability of scheduled services at existing churches and the lack of full-time ministers made identifying, contacting and utilizing churches difficult. This meant that access to the African-American communities could not be based solely on churches.

The CIA analyst also identified the only grocery store in the project corridor that participated in the US Department of Agriculture Food Stamp program. This food subsidy program is available only to those who meet “low-income” eligibility. The store manager was contacted and asked if it would be possible to set up a table in the grocery store parking lot so that customers could be interviewed. The store manager not only allowed the CIA analyst to set up a table inside the grocery store, but also told the CIA analyst what days of the month and hours of the day most food stamp recipients usually shopped. A table was placed in front of the produce section, a strategic location where everyone entering the store was forced to pass the interview table. While several interviews were completed, most shoppers were in a hurry to get an item and get home to cook supper, get back to the kids in the car, etc. Very few of the shoppers were browsers. The use of the grocery store did provide an opportunity to ask if residents knew anything about the project, to add residents to the newsletter mailing list and to tell the residents quickly about the project. This meant that using the grocery store would not provide the opportunity to have lengthy discussions about the project, or effectively engage the low-income population except on limited days of the month. This outreach attempt took approximately four hours and cost approximately $240.

REACHING THE COMMUNITIES THROUGH STUDENTS
Two key community leaders were the principals of Maysville and Pollocksville Elementary Schools. Both schools included pre-kindergarten through fifth grades and had less than 200 students. Each school was located within the project corridor just a few blocks west of US 17 and included students who were predominantly from the project corridor. In addition, the principals supplied the following real-time demographic information:

- During the 2000 – 2001 school year, minorities accounted for more than 60 percent of the students at both schools. This was also true for the 2001 – 2002 school year. The minority populations in both schools were overwhelmingly African-American.
- In the 2000 – 2001 school year, 83 percent of the students at Pollocksville Elementary School and 88 percent of the students at Maysville Elementary School were eligible for the US Department of Agriculture’s Free and Reduced Meal Program. This program is an excellent means of identifying low-income families. By the 2001 – 2002 school year, this figure had increased to 91 percent at Pollocksville Elementary School and decreased to 78 percent at Maysville Elementary School.

Because of the relationship between low-income, low-educational attainment and literacy level, the principals were asked to estimate what percent of the parents were semi-literate or illiterate. In both cases, the responses ranged from 30 – 40 percent. This figure was borne out by the National Institute for Literacy’s publication *The State of Literacy in America* (1). This publication estimated that 32 percent of those 16 years old and older in Jones County, where both elementary schools were located, could not read above Literacy Level 1, or fifth grade level.
The CIA analyst was unable to identify any other literature that specifically addressed literacy statistics for counties. While the Census of Population and Housing (2000) does address educational attainment in Table QT-P20 Educational Attainment by Sex, the information presented for those 25 years old and older does not equate to any specific level of literacy. Because of the limited amount of information available on identifying and engaging low literacy and Limited English Proficiency populations, the Federal highway Administration commissioned a research project in 2003 to determine best practices.

Because of the high level of illiteracy, traditional newsletters and other written material would prove inadequate as the sole means for disseminating news about the project. The economic and literacy barriers to public participation and the variability of the church as a communication’s pipeline meant that non-traditional public involvement techniques would have to be created and utilized in order to engage all segments of the public. These barriers also meant that access to traditional public involvement tools such as websites and newspapers was beyond the financial reach of many of these families because computers, Internet access and newspaper subscriptions were unaffordable.

TEACHING: A NON-TRADITIONAL TECHNIQUE

The opportunity to create and implement non-traditional techniques came as a result of a request from Ms. JoAnne Stone, the principal of Pollocksville Elementary School. The principal asked that the CIA analyst provide a presentation to the fourth and fifth graders about roads in general and the project specifically.

The CIA analyst prepared a power point presentation entitled “Where Do Roads Come From” (Figure 2). Before presenting it to the Pollocksville elementary students, it was first beta-tested on the 10-year old son of a fellow employee. This insured that “technical jargon” had been eliminated and the students’ language comprehension was not exceeded. The CIA analyst volunteered to give the presentation at Maysville Elementary School, but the principal declined the offer.

The presentation was designed to teach the students that putting a road anywhere was a complex process. This was accomplished by identifying the wide range of professional specialists that were needed to prepare the environmental documents, engineering plans and survey plats; the array of federal laws that had to be followed; the potential impacts on the human and natural environment that had to be examined; and, the many ways in which visual communication techniques were used to communicate with the public. In order to demonstrate the areas where environmental impacts occurred, the CIA analyst used a base map that showed the town of Pollocksville and its surrounding area with Pollocksville Elementary School highlighted. Over this base map, the location of wetlands, floodplains, hazardous materials, cultural resources, communities, community facilities, etc. were shown one by one. Interspersed between the overlays were photographs taken in the project corridor that illustrated these features.

At the end of the presentation, the CIA analyst held up a sheet of paper with the title “Where do you think the new road should go?” that showed all of the overlays superimposed on the base map. Each student was asked to take a sheet home, talk to their parents about what had been learned from the presentation, draw a preferred roadway alignment on the base map, and return the sheet signed by both the student and parents the next day to their teacher (Figure 3). The next day, 58 of the 60 students returned the sheets of paper. As a reward, each student was given a certificate as a “Jr. Environmentalist” (Figure 4). An unexpected part of this exercise
was that the students did not want to give up their “Where do you think the new road should go? sheets.

The creation of “Where Do Roads Come From” presentation and the printing of the “Where do you think the new road should go?” flyers and the “Jr. Environmentalist” certificates took approximately 24 hours and cost approximately $1,600. Approximately one-third of the presentation was project specific and utilized information that had already been collected during the preparation of the Environmental Impact Statement. The remaining two-thirds were not project specific and dealt with the professions engaged in any federally funded highway project and the laws governing those projects.

While the students proved to be a wonderful conduit for taking information to and getting information from their parents, this public involvement tool is limited to those who have children and/or grandchildren in school. It is but one tool in a toolbox of public involvement techniques that should be used in trying to reach all segments of the population, including those who have a high level of illiteracy.

FUTURE PLANS TO REACH OUT
The enthusiastic response by the students to the “Where do you think the new road should go?” homework assignment led the CIA analyst to think that students could prove to be a good conduit for getting other information to and from their parents, especially those parents that were illiterate or semi-literate and/or low-income. In addition, NCDOT recognized the public relations and public outreach value of being able to reach a variety of communities through programs and curriculum in the schools. NCDOT expressed a desire to replicate this approach elsewhere in the state. The experience stimulated the creation of other public involvement techniques that could involve both students and parents. These techniques include the following:

Administer a Student Questionnaire
One way students could collect information relative to the project was to administer a questionnaire to their parents and/or grandparents as a homework assignment. Responses would be recorded to six core questions including:

• what is the most convenient day of the week to attend a meeting
• what is the most convenient time of the day or night to attend a meeting
• what is the most convenient location to attend a meeting
• do you need transportation to get to a meeting
• do you need child care at a meeting and
• what language do you speak at home.

The responses would be used to design a public involvement plan that reflected the schedules, lifestyles and backgrounds of the individuals within the communities. This could reveal important local traditions, habits and points of interest, such as:

• halftime at Friday night football games and Sunday after church covered dish lunches might be the best times and places to have meetings
• many in the community could have two jobs or work second or third shift jobs
• places that are considered safe for some racial or ethnic groups, may not be considered safe for other racial groups, especially after dark
• public or individual transportation may not be available and limit access to meetings
• many single head of household parents may not be able to afford or do not have access to a baby sitter so they can not attend meetings and
interpreters may need to be provided. Incorporating these considerations would ensure that “meaningful access to decision-making information” was provided to all communities. In addition, the parents would be asked to identify important community issues, existing transportation/safety problems, personal concerns, upcoming events, etc.

Each student who brought back responses would be recognized. Rewards might include a Frisbee or a neckband holder for house keys with the NCDOT logo. The creation and printing of a one-page questionnaire would take approximately two hours and cost approximately $150. The Frisbee or other reward items for 60 students would cost approximately $2 each. Summarizing the information returned on the interview forms would take approximately one hour and cost approximately $60.

**Personalize the Teaching Material**

In addition to providing information for designing a public involvement plan, teachers could use the questionnaire responses for classroom math lessons and English lessons and/or homework assignments. The math lessons could involve analyzing how many parents said Thursday was the most convenient day of the week to meet and what percent of all parents wanted to meet on Thursday. The English lessons could involve writing a paragraph on why meeting on Sunday afternoon at the fire station was convenient for most parents. This could increase project interest, improve meeting attendance and provide continuous feedback from residents.

**Publish a Project Newsletter at the Fourth or Fifth Grade Level**

In order to be accessible to as many community members as possible, the project newsletter needed to be written at the fourth or fifth grade reading level (Figure 5). In addition to the normal channels of distribution, it could be given to the students to take home to their parents. If those parents could not read, the students could read it to their parents. For those families with children, the students could serve as an additional way to distribute and collect information from many of the populations that are not usually reached. By incorporating information obtained from the student questionnaire, community issues could be identified. This could create a new and effective communications tool that would demonstrate attention was being given to a community’s concerns.

The cost of creating, printing and mailing a newsletter was a part of the original contract. Writing the test at a fourth/fifth grade level rather than a tenth grade level would not incur any additional costs. *Time* magazine writes at a seventh grade level.

**Create Bookmarks**

As a way to encourage reading and increase the students’ knowledge of the project, the environment and features within their community, a series of bookmarks could be developed to reward students for their reading efforts (Figure 6). The bookmarks could include a photograph on one side and a write-up on the other side of the subject shown in the photograph: threatened and endangered species, historic structures, archaeology sites, water bodies, communities, community facilities, floodplains, farmland, etc. Every time a student read a book and returned it to the library, the librarian would give the student a different bookmark. After collecting a predetermined number of bookmarks, the student would be further rewarded.

For the most part, the photograph and text used on the bookmarks would come from the technical reports that would be prepared as part of the Environmental Impact Statement. In
addition, other technical information could be obtained from federal regulatory agencies. The bookmarks would provide a way for multiple agencies to provide information, leverage their limited funds, create an educational tool for children and serve as a continual reminder of the project.

Creating and printing a series of 24 bookmarks would take approximately 24 hours and cost approximately $1,600. A hole would be punched in the bottom of each bookmark and a grommet would be used to hold the bookmarks together.

CONCLUSIONS

The use of students as conduits to parents and as active participants in the transportation decision-making process has been the included in two recent releases by the US Department of Transportation: Transportation & Environmental Justice, Case Studies (2000) and Transportation & Environmental Justice, Effective Practices (2002). Both provide examples of using students as part of the overall public involvement process. Youth involvement should be viewed as an effective and acceptable method in the overall “tool box” of public involvement techniques.

Low literacy residents drive, pay taxes, work and have families. Most do care about what happens in their communities and would welcome the opportunity to become involved in the transportation decision-making. Non-traditional techniques such as using students can be useful in reaching and engaging not only the traditionally underserved, but also other segments of the community.

The example addressed in this paper succeeded because of two overriding forces:

- The principal of Pollocksville Elementary School wanted to give the students “real world” exposure and make learning more interesting. By allowing students to become a conduit to their parents who might not be able to read or write, Ms. JoAnne Stone provided a new and different avenue for involving the public and assured that a portion of the traditionally underserved was reached. School resources, including teachers and students, were made available at no charge.
- Traditionally, DOTs and their consultants have neither been risk takers, nor aggressively pursued involving all segments of the population. As the number of controversial projects increased, NCDOT realized that the old ways were not working. As a result, a consultant willing to try new non-traditional techniques was hired and given enormous freedom. As a result, openness and flexibility led to unusual coalitions that provided opportunities for all segments of the populations to be involved and engage in the decision-making process.
REFERENCES
LIST OF TABLES AND FIGURES

FIGURE 1  Project area location

FIGURE 2  US 17 logo

FIGURE 3  Student take home assignment

FIGURE 4  US 17 Jr. Environmentalist certificate

FIGURE 5  Proposed student newsletter

FIGURE 6  Environmental bookmark
FIGURE 1 Project area location.
FIGURE 2 US 17 logo.
Where do you think the new road should go?

Be careful of the neighborhoods, the wetlands, the Historic areas, floodplains and communities facilities.

Tell your parents why you chose your new road’s location.

Parent’s signature

Student’s signature

FIGURE 3 Student take home assignment.
FIGURE 5 Proposed student newsletter.
FIGURE 6 Environmental bookmark.