

2015 Achievement Awards Virginia Association of Counties

APPLICATION FORM

All applications must include the following information. Separate applications must be submitted for each eligible program. **Deadline: June 1, 2015.** Please include this application form with electronic entry.

PROGRAM INFORMATION

Locality: _____

Program Title: _____

Program Category: _____

CONTACT INFORMATION

Name: _____

Title: _____

Department: _____

Complete Mailing Address: _____

Telephone # _____ Fax # _____

E-mail: _____

SIGNATURE OF COUNTY ADMINISTRATOR OR CHIEF ADMINISTRATIVE OFFICER

Name: _____

Title: _____

Signature: _____

Spotsylvania Environmental Education Development - (SEED)

Program Overview

Spotsylvania County's Environmental Education Division has been educating students and residents for the past nineteen years. We needed to revitalize our program and offer a new experience. Today's generation is high tech and web savvy. To be able to capture the attention of students as well as residents we decided to give them a whole new experience, one that we knew would offer cutting edge technology. Like many other localities, we have issues with litter, low recycling rates, and wasting of our precious natural resources. We needed to show our students the issues at hand and to offer up solutions they could use to help stop littering, recycle more, and make better decisions concerning our environment. Our SEED program answers many questions and offers solutions to make our County a more pleasant place to live and work.

Summary

Spotsylvania County's Waste Resources Division has been educating students and residents for the past nineteen years. However all things must evolve with time, after a review of the current program efforts it was determined that a revitalization was in order to reach today's generation! To be able to capture the attention of students and residents Spotsylvania County needed to establish a program based on today's technology and expectations of engagement in order to communicate the importance of environmental awareness. The problem was how to inspire and excite current and new generations about the environment and its responsible use in a new way. After over two years of coordination and development Project SEED was born to meet the need; utilizing cutting edge augmented reality on a mobile education platform to create a living education model that actively engages visitors through the use of tablets and image recognition software.



The Problem/Challenge/Situation Faced

Spotsylvania County performed an evaluation of the existing Environmental Awareness Program to determine its success, not only in terms of monetary investment but also its public engagement. To put it in economic terms.....what was our return on investment, both in short term and long term benefits? Fairly quickly into the review the County found that traditional style education outreach programs, such as in-classroom sessions and public events just weren't working because of the basic fact that it's difficult to create a buzz about environmental topics. This lack of excitement basically means that the individuals that are paying attention and engaging in the program are already interested in the environment and its responsible management. From a marketing standpoint these individual can be considered existing customers; while you always want to take care of your existing customer, the real question is how do you get new customers?

Under the guiding principle of *creating new customers* in mind the County took a fresh look at the overall environmental education movement in the County. The results of this study yielded some interesting observations which helped develop the guiding principles of our new program!

Observations included:

- *Existing programs are often piece meal:* A review of available programs, including our own, indicated that most organization and education programs only reach out with the information important to a specific group interest. For example a Public Utility may only provide information on water/sewer/electric, while a Waste Resource Department may only look at solid waste related issues, and a Soil and Water Conservation District may only look at storm water. In the end, fragmentation of an education outreach program does not properly convey that all the aspect of our environmental responsibilities is interlinked. This fragmentation created the second guiding principle for the new program...*Be Comprehensive!*
- *Impacts of Standards of Learning (Virginia SOL):* With the development and implementation of a comprehensive "Standard of Learning" in Virginia Public School System there have been some challenges in terms of environmental awareness programs. Not only has standardization created less time available for extra school programs including environmental awareness, it has also impacted the content of those program. As any new program was developed by the County the program must take into consideration of meeting the Standard of Learning syllabus or the program would have no chance at reaching full potential in our Public School System. This would be the third guiding principle....*SOL Compliance.*



- *The Written Word:* One of the main objectives of any new program developed would be to establish a new customer base for the message. Anyone can look around at the number of tablets, phones, and other electronic devices that are available and can quickly see that everyone and certainly younger generations are evolving in how they expect to see and have information presented. Gone are the days of getting in front of a room and reciting information because as soon as you start speaking you lose the audience

to their phones and tablets; therefore we must engage our participants in a fashion that excites them! The County's previous program was based on a series of lectures and hand on activities that were designed to convey the environmental message. These programs were designed around about a ½" thick booklet available to teachers and residents; a booklet that no less had a snail with a recycle tote on its back as its logo! The booklet and its encompassing programs worked for nineteen years, so why fix it? To put it in very simple terms, it was "boring" by today's standards. People want engagement now and to be kept entertained in our 15 minute world, where if they get bored with you in 15 minutes or less they find their own entertainment on their phone. This would be the fourth guiding principle....*if you can't beat them....join them!*

- *Mobility:* The County's existing program, while mobile, could really only be taught to small interested groups in a classroom and didn't allow a presence at major local cultural events. This meant that the existing program did not efficiently convey its message to the masses; a problem that would need to be solved with the new program. This resulted in the county looking into a mobile education trailer, but mobile education trailers could turn into sunken investments. Based on the review of many existing mobile education trailers in the environmental arena it was determined that many could not be easily or cheaply altered and improvement over time. This is something the County wanted to avoid by following a fifth guiding principle.....*a living project.*

After approximately a 6 month review period the County developed a formal list of five (5) guiding principles for the new environmental awareness program. Those guiding principles are:

1. Create New Customers
2. Be Comprehensive
3. SOL Compliance
4. If you can beat them....join them!
5. A Living Project

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With the guiding principles established the County began to brainstorm on program ideas until one day the message seemed clear. What are we trying to do here in its most basic form? Are we educating? Are we just giving information out? Are we engaging the public? Are we protecting the environment? While we are trying to do all these things in reality all we are doing is marketing a product, a product called environmental awareness. So what better place to start with than current product marketing trends; an environmental message can be sold just the same way a new tennis shoe can....by hype, buzz, quality, and communication...you have to make the customer want the product! Very early on in the process the most promising marketing method floated to the surface and that is the use of “augmented reality.”

Augmented reality is a form of image recognition software that in a sense merges the digital and real world. This technology has allowed for visitors to a London, England shopping center to interact with dinosaurs and



has allowed for products to show how they are made by simply scanning a logo. This software allows for anyone to register a photo of just about anything and then scan the photo with a phone or tablet. That scan is then compared against a data base which will either link to a video or allow for individual portions of the original picture to be modified or turned in to interactive features. This marketing technology has been highly used in Europe and is being increasingly used here in the United States. Probably one of the most interesting aspects of the technology is where this is being used in terms of advertisement. Many customers of this augmented reality marketing

are printed media aimed at the under 30 generation. These printed media customers are using the technology to make magazines and catalogs have an interactive element in an effort to reach technology based generations. This just happens to be the same problem as many campaign programs, with the exception that our product is environmental awareness and not the newest shoe. So if it can be used here to solve the technology gap why can't it be used in environmental awareness!

After additional research the County selected to utilize an augmented reality specialty company known as “LAYAR” to host the augmented reality portion of the program. The LAYAR Company has an application that is available for download through mobile application stores (App Stores) at no charge. Once downloaded on any device the application can scan and access any augmented reality information that has been registered with the LAYAR application. At this point the County had its vehicle for communication...now to actually build and drive it.



Implementation/Execution

With the backbone of the new program established the County engaged the students and faculty of the County Public Middle School Art Department to develop a name, logo, and slogan based on the project objectives. Out of a multitude of ideas the final project title of “Spotsylvania Environmental Education Development” or “SEED” was established; the title was selected because it personifies the objective of the program and that is to plant a seed in the minds of residents and youth to be more environmentally conscious. One can see that this was also incorporated into the SEED program logo with the idea of the letters growing out of the soil. County staff worked to take the concept one step further to include the new technology aspect with the additional slogan of “Educating Today for Tomorrows Future.”



While the SEED program title and logo were in development the County evaluated the five original project guidance principles and how the use of augmented reality could be used to meet the objectives. Each specific principle was evaluated as described below:

Create New Customers: Use of augmented reality would create a “cool” factor and develop a buzz around the product. This would in turn have people reviewing the material for no other factor than to see the technology work. While they are seeing the technology they are seeing the environmental awareness message and if a new customer takes away one new piece of information then we have success!



Be Comprehensive: Being comprehensive in environmental awareness programs has always been a challenge because there is a lot of information out there to communicate and relatively little time dedicated to get the message across. With that in mind what if we could compress volumes of information into one picture and tell a story of the full cross section of environmental awareness? Augmented reality has made this possible! The County really wanted to make their program comprehensive by identifying 10 major awareness efforts to be included. The specific awareness efforts include Wastewater Treatment, Water Treatment, Compost, Landfill, Decomposition, Litter Prevention, Recycling, Treasured Natural Resources, Water Conservation and Energy Conservation. That is a lot of information to be presented even in a mobile education trailer application; that is where augmented reality comes in. By using the technology the County was able to develop 10 education boards that are mounted

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along the walls of the mobile trailer unit; each board has 10 photos or features that have been augmented with additional information. Utilizing the LAYAR application the user can scan the wall and access a wide variety of multi-media education information from videos to slides. User can either use their own phones/tablets or one of the three tablets provided.

SOL Compliance: Any program developed had to be in compliance with the SOL syllabus, failure to do this would result in a substantial road block to have the information available through the Public School System. In order to ensure that the information presented was in compliance, County Staff worked closely with Public School officials to ensure that information presented was relevant. By using the augmented reality and the LAYAR application the County can update (daily if they choose) the information presented at no cost. This means that the material can not only be changed if SOL's change but also be changed based on the grade level of any particular user group.

If you can't beat them...join them: It seems that these days everyone carry's around a phone or tablet with more computing strength than what put man on the moon. That computing strength is often reserved for watching the latest viral video....why can't we channel that to environmental awareness! Using the augmented reality engages users through the phone and tablet which is a preferred method of communication for many younger generations. By using these forms of communication we are able to bridge a technology gap that has developed that has set expectation that everything should be interactive.

Living Project: As discussed previously the County did not want to have a project that would turn into a sunk cost, it must be adaptable....it must be a living project. While the main boards that are mounted in the mobile trailer do not change, the message behind them can! Augmented reality allows the program manager to change information on a daily basis based on the user group and also allows updating so that the message does not grow stale. In addition, the boards that are mounted in the trailer are removable meaning that additional boards can be added in the future; this is particularly promising for partnership events. For example if a Fire/Rescue Department has an event a portion of the boards could be replaced with information directly related to Fire/Rescue, the other board would remain environmental awareness. By providing this information on two seemingly unrelated topics combined, the County can increase the traffic in the mobile unit and reach groups who may have not entered a solely environmental awareness education opportunity. Once again if one new person learns with one new thing we can declare that a success.

So How Do We Do It?

The United States is still in a period of economic recovery and the County knew that any direct tax funding for a project of this scope would be difficult. However, the County felt that this was still an important opportunity and was necessary to continue our environmental stewardship. This left the County with two funding options: grants and private partnerships.

Innovative Financing and Collaboration

Each year the County receives a formal grant from the State of Virginia for use in environmental education, recycling, and litter prevention. This money in essence became the seed money for the SEED project. Unfortunately grant funding in any single year was not sufficient to get a good start on the project. This forced the County to purchase aspects of the project individually over a period of two years. During that two year period the County worked closely with the Spotsylvania County Sheriff's Office to develop a network of private and public partners to bring this project to fruition. The comprehensive nature of the project allowed for the County to pull a wide array of partners into the program. Partners provided not only monetary donation but also in-kind services. Partners include Studio 4 Square, Science Museum of Virginia, University of Mary Washington, Spotsylvania County Sheriff's Department, Rappahannock Electric Cooperative, Tri County Soil Water Conservation District, Mohawk Carpet, Coins of Anything, National Park Service, The Home Depot, Virginia Cooperative Extension, 4-H, Department of Forestry, Morton's Power Equipment and North American Marine Environment Protection Association.

By only purchasing what could be afforded at the time, utilizing grant funding and by leveraging private partnership this project was completed without the support of local tax dollars. In total the project cost approximately \$28,000 to implement a breakdown of the project costs is provided below:



<u>Funding Source</u>	<u>Amount</u>
Litter Prevention & Recycling Grant	\$21,601
Spotsylvania County Sheriffs Auxiliary Fund	\$2,000
Rappahannock Electric Cooperative	\$500
Tri-County Soil and Water Conservation District	\$400
In-kind Service Donations	\$3,224

Results/Evaluation



So far the SEED project has proved to be incredibly successful and already shown to be an adaptable, living project. Shortly after development of the trailer and the ten (10) associated augmented boards Staff worked to create permanent poster installations in public spaces and brochures which include photos of the ten (10) boards. The beauty of the augmented reality system allow Staff to take the large presentation boards with their volumes of information and shrink them to small size with no loss of information. Since the technology only provides a link to stored information the size of the photo scanned is not a factor which allows the same amount of information to be stored in a postage stamp size or 24" x 36". The County intends to expand on this program extension in 2015.



In addition to the adaptability of the size of the message, the County has found this method of education outreach truly has universal appeal. The "magic" of the technology and the message is reaching more people than ever before from young students to grandmothers. A really amazing unforeseen bonus is that the trailer and its technology is allowing the County to reach out to those individuals with special needs more than ever before. Many individuals with special needs communicate with the world through tablets and technology and it is amazing to be able to see them scan and interact with our boards in a way that traditional outreach would not allow.



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In terms of tracking how successful the project has been, LAYAR makes that fairly simple since the number of scans are tracked. The project averaged 26,500 scans in 2014. A breakdown per event has been provided below:

Environmental Education 2014	Events	Attendees
County Schools	17	8,500
Libraries	3	6,000
Earth Day	1	2,300
Autism Awareness Day	2	3,700
National Night Out	1	1,600
Rappahannock Family Fun day	1	2,700
Virginia Recycling Associations Annual Conference	1	150
SWANA	1	180
Science Museum of Virginia	1	450
Tri County Water & Soil Conservation District	1	920
Total	26	26,500

In addition to multiple events the SEED project has garnered both regional and statewide attention. Over the past year both private (including the Coca-Cola Corporation) and public agencies have requested to tour the trailer and learn about the possibilities of augmented reality. The trailer has been a topic of presentation at the Virginia Chapter of SWANA and the Virginia Recycling Association. Recently the Utilities/Public Works Department was recognized by the Central Virginia Solid Waste Management Authority for advancements in public education outreach and recognized as an outstanding program by the Virginian Recycle Association.



The County feels that development of the augmented reality SEED Project for the environmental awareness program has set the new standard for environmental outreach programs across the State. Our project has brought together many State, Federal and local businesses to work on one common goal, to educate the public about the environment and to make better choices concerning it. Seeing the expressions on the student's faces when they see how augmented reality works for the first time is truly rewarding. The comment we hear the most is that we've made Environmental Education fun and have encouraged them to make a difference. Only imagine where we can go tomorrow with a common goal!

WOW!
THAT'S AMAZING!

How did it
do that!

THIS IS COOL!

Innovative Technology

TRY ME!

1. Download "Iayar" on your iPhone/tablet.
2. Follow directions and scan me!
3. Enjoy!

