"Economic and Cultural Impact of the Proposed Mountain Valley Pipeline in Montgomery and Giles Counties, Virginia"

Virginia Polytechnic Institute and State University
Dr. John Rudd, Jr.
Assistant Vice-President for Sponsored Programs
North End Center 0170
300 Turner Street, Suite 4200
Blacksburg, Virginia 24061
540- 231-5281

February 1, 2015 – June 30, 2016

May 31, 2016

Dr. Anita Puckett
Associate Professor and Director, Appalachian Studies Program
207 Solitude
Department of Religion and Culture 0227
Virginia Polytechnic Institute and State University (Virginia Tech)
Blacksburg, Virginia 24061
540-231-9526
apuckett@vt.edu

Final Report Narrative

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Title of Project: Economic and Cultural Impact of the Proposed Mountain Valley Pipeline in Montgomery and Giles Counties, Virginia

Grant Period: February 1, 2015 – June 30, 2016

Grantee Name: Virginia Polytechnic Institute and State University

Project Director: Dr. Anita Puckett

NOTE: The final report should document that all elements of your institution's individual, approved project proposal have been addressed, in addition to requirements of the Scope of Work (see attached).

1.0 Description of Project:

1.1 Purpose:

The overarching purpose of this project was to examine whether the Mountain Valley Pipeline (MVP) construction project is economically and culturally beneficial or detrimental to the New River Valley (NRV) counties of Giles and Montgomery in Virginia, which are the only two NRV counties included in the proposed and alternate pipeline routes. As the project developed, however, a specific purpose emerged, which to address the following question: Does cultural attachment exist among landowners along the proposed MVP route in such numbers that it should be an important consideration in the final pipeline route vis a vis the use of this concept by contributing project partner, the National Forest Service, in previous major utility construction projects?

The pipeline project is to build an underground 42" diameter, 301 mile *transmission* natural gas pipeline, with four compressor stations, running from the natural gas production fields in Wetzel County, West Virginia, to the Transco major transmission line in Pittsylvania County, Virginia. This project has generated extensive local resistance in Virginia and portions of West Virginia in large part because of its size (150' construction easement and 50' permanent easement on the surface) and potential for leaks and explosions, and because it removes extensive swaths of land from landowners' use and control through easement use restrictions. Pipelines of this size are new, and only a very few for short distances have been built in the United States, so impact, safety, and public health data are scant except for hydrofracking sites where the gas is produced and the compressor stations necessary to increase gas pressure after 40-60 miles of transmission (e.g., Webb et al. 2016).

Giles and Montgomery Counties were selected for the project because they are served by the New River Valley Regional Commission (NRVRC), which was the

project's community partner, and because they are easily accessed by Virginia Tech students involved in the project. Cultural attachment was selected as a research topic early in the project's history because it focuses on cultural factors and was one not being examined by local organizations, or, at the time of the ATP project, by MVP. Yet it was a topic that had been included in the Federal Energy Regulatory Commission's (FERC's) biweekly meetings with its contributing partners, which included the National Forest Service, as a potential consideration in determining a final pipeline route (Friedman 2015). FERC is the independent federal government agency that grants rights to eminent domain for natural gas pipeline construction, rights that allow construction to occur at all.

The questionnaire used to interview all interviewees participating in the project was expanded to also include questions about the landowner's attitudes towards construction of the MVP more generally (see Attachment C). This was done to explore the possibility of a correlation between cultural attachment and pipeline resistance, a topic of potential interest to the NRVRC and to the NFS in its assessment of the MVP's impact on national forests and surrounding properties. Information from landowners regarding how they see the pipeline impacting their land can be significant when the NRVRC is planning how to mitigate the cultural-economic impact, and do so from residents' own insights about how it will impact or damage their identities and cultural values. It was also potentially helpful information for future studies that will examine the full extent of cultural attachment along the entire pipeline route in the context of local citizen mobilization against the building of the MVP.

The results of the project were distributed to the NRVRC to assist it in planning for possible changes to the counties' cultural and economic sustainability due to the extensive loss of land to pipeline easements, should the pipeline actually be built. Such losses would make many properties of smaller size (less than 50 acres) potentially for unusable most agricultural activities and many domestic activities. If the pipeline is not built, then project results can be used for developing initiatives that build on existing cultural and economic resources so as to enhance cultural capital and the sustainability of communities in these two counties.

1.2 Background

In October 2014, Mountain Valley Pipeline, L.L.C. (MVP), a limited liability corporation formed by EQT Corporation and Nextera Energy, submitted a prefiling request to the FERC for eminent domain authorization through a certificate of "convenience and necessity" to construct a 42" diameter natural gas transmission pipeline from Wetzel County, West Virginia, to Pittsylvania County, Virginia, along with four compressor stations. Fourteen of the 16 counties affected reside in Appalachia. The proposed pipeline will cross the Appalachian Trail, the Blue Ridge Parkway, two national forests, several land conservancies, and a wilderness area. The line is estimated to cost about $3.5 billion. It is scheduled to be in production in 2018 (Home 2015).

Initial announcements about this project indicated that there was to be no local access to the natural gas, but that it would be transmitted to a multi-state Transco connecting natural gas line in Pittsylvania County, Virginia, for distribution elsewhere where it will be burned in electricity generating power plants and transported overseas for sale in liquid form. Therefore the Virginia counties involved would not benefit locally from the natural gas.

Resulting from this FERC pre-filing and subsequent actual filing has been hotly contested and widely distributed citizen and local governmental opposition to the construction of a line of this magnitude through an environmentally, geologically, historically, and culturally sensitive landscape. The size of the easement required (150' for construction and 50' across for a permanent easement) (Public, Stakeholder, and Agency Participation Plan 2014: 41); the destruction of the environment (trees and other flora, threatened and endangered species, water quality, and farmland) to lay and maintain the pipeline; the engineering of the pipe across heavily karsted, seismically-active, and geologically faulted morphology; and the likely safety and health issues raised by both pipeline and compressor station pollution, are among the many major concerns that have been voiced by residents organizing against the project (e.g., Preserve Craig; Preserve Floyd; Preserve Giles County; Preserve Greenbrier County; Preserve Monroe; Preserve Montgomery County VA; Preserve the New River Valley; and Preserve Roanoke). These are in addition to economic concerns in loss of property values, ecotourism, and opportunities for business growth, despite company-promised significant increases in county income through utility ad valorem taxes. Claims by MVP that the impact will be economically positive (New Study 2014) have not withstood the critiques of independent economic analyses (Phillips 2015), and the negative public health impact studies have been increasing (c.f. Webb et al. 2016).

This opposition is concentrated in the lower West Virginia counties (Monroe and Greenbrier) and the Virginia Counties of Giles, Montgomery, Roanoke, Craig, and Franklin. These anti-pipeline grassroots efforts have resulted in close and careful analysis of MVP's reports and greater-than-usual attendance at company Open House activities required by FERC. One Montgomery County Board of Supervisors meeting with MVP officials resulted in a turnout of 800 citizens, while similar meetings in Giles and Roanoke Counties yielded several hundred (Adams, 2014a; 2014b; 2014c). Many of those resisting in the project area of the New River Valley (NRV) areas of Giles and Montgomery Counties are Ph.Ds. employed at Virginia Tech, Radford, and other surrounding colleges. Their analyses therefore are detailed, analytic, and informed, but not necessarily based in practical experience.

At the time of this project, MVP had responded to this opposition with newspaper ads, open meetings with Virginia counties' Boards of Supervisors and their West Virginia counterparts, and closed meetings with various local government stakeholders. These are in addition to its required public written reports on progress to FERC. It also provided a public economic analysis of the pipeline's impact that is, as would be expected, quite positive towards the pipeline (Mountain Valley Pipeline Offers 2014; New Study Projects 2014). These efforts are in addition to the county-level Open Houses mentioned above and the presence of MVP

representatives throughout the impacted region at the various FERC-sponsored Scoping Meetings for citizen input. Its economic assertions in its economic report, however, have been modified downward by subsequent MVP quarterly reports to FERC, supporting critics' assertions of benefit exaggeration (cf. Draft Resource Report Nos. 2, 6 and 9 2015).

Opponents, meanwhile, had also presented their negative economic analyses of key economic sectors such as real estate values and tourism (Phillips 2015). In addition, Montgomery County government attempted an analysis of the MVP documents, but did not succeed in reconciling MVP figures with their own. This has led County Administrator Craig Meadows to state that the documents reflect selective use of data available that, in turn, construct a distorted picture of economic contributions (Meadows 2015).

These disparities in proposed pipeline construction and maintenance impacts also led to many impassioned discussions by local citizens, grassroots organizations, and county governmental officials concerning the effect of the proposed pipeline on county and community sustainability. Central to economic and cultural issues was whether or not counties, towns, and communities in the two NRV counties will experience enough loss of farmland and farm activities, eco and heritage tourism and other visitor-generated income, decline in private home real estate values, loss of current highly-trained professional jobs, and loss of cultural identities to the point that counties and communities will suffer economic decline and the kinds of cultural fragmentation that also foster loss of county sustainability and viability (Appalachian Mountain Advocates et al. 2015).

At the same time, several different studies had proposed analyses of the potential value to energy infrastructure needs in the American southeast and mid Atlantic regions, as well as internationally. These studies often contradict each other and may or may not take into account the fact that four such pipelines are being proposed in Virginia alone, and at least 10 for the American east (Appalachian Mountain Advocates et al. 2015). Calls to FERC that the aggregate and cumulative impact of all lines must be assessed have been made by numerous involved governmental and legal organizations (e.g., Roanoke Appalachian Trail Club 2015; see also Appalachian Mountain Advocates et al. 2015 for a summary of these organizations), but FERC, the regulatory agency in charge of approving such interstate lines, had not yet (as of the end of this project in December 2015) responded favorably to these requests. Consequently, county-level concerns have not been effectively dismissed by clear arguments of greater national or regional necessity, at least as residents and local governmental officials view them.

It is into these areas of active opposition between local citizens and corporate representatives that this project was inserted. Its key objective was to investigate how the MVP, should it be granted a certificate of convenience and necessity by FERC so construction could commence, would impact Giles and Montgomery county communities, if at all, from the perspective of cultural and economic impact. Yet obtaining valid social scientific qualitative data when the line had not yet been built and a pipeline of this size had just begun being built in other areas was, as the

project was originally conceived, a challenge. Therefore the project needed to be modified.

Initially, the project was to engage Virginia Tech students in background readings via a traditional classroom format and in participant/observation and interview activities with local residents likely to be impacted by the MVP, should it actually be built. Early in the term, however, the necessary research modification emerged through the model of "Cultural Attachment" via discussion by the NFS, which was a "contributing partner" to the FERC process (Friedman 2015). The NSF had previously used it as a model for measuring the cultural (and potential economic) impact of utility projects in Appalachia on properties near national forests. Cultural attachment research utilizes anthropological ethnographic methods to obtain replicable social scientific data on how and why residents are so attached to their land that permanent alteration of it so that they cannot use it in culturally-recognized and traditional ways results in unmitigatable loss to their cultural and personal identities and orientations (Joseph Kent Associates 2015). Since cultural attachment also involves consideration of non-monetary or non-profit-driven economic activities such as hunting, home gardening, and maple sugar making (among many other economic-impacting activities), use of cultural attachment methodologies also yields economic information, as proposed in the original proposal for this project.

The FERC recognition of cultural attachment as a potential component in its MVP assessment then permitted refinement of the Virginia Tech project so that it would be more empirical, objective, and replicable in its findings, as well as potentially useful to both the NRVRC and the NFS. Application of it in the class therefore reduced possible claims of bias in its results.

Virginia Tech students then refined their research so as to extensively examine printed and online document collection and analysis and then engage in ethnographic and on-site interviews in a manner consistent with cultural attachment methodologies (see section 2.0 below for further description of research activities; see Attachment A for a more detailed description of this methodology via the student PowerPoint). In addition, direction and guidance in terms of what aspects of cultural attachment were most vital to Giles and Montgomery Counties was provided by our community partner, the NRVRC, and its director, Mr. Kevin Byrd. Finally, interviews with Pittsylvania County landowners living along the smaller Transco line, to which the MVP will connect, was added to offer a control group who already had been living for over 50 years with a major transmission gas line on their properties.

1.3 Fall, Spring, and Summer 2015-2016 Project Goals

1.3.1 Research Goals

The Fall 2015 research goals of the Appalachian Teaching Project (ATP) class at Virginia Tech were four-fold:

1. To conduct research that would illuminate the actual cultural and economic impact of the MVP on both residents who would be directly impacted by the MVP, should it be built, and the counties investigated more generally. These findings could then be used to influence asset-based development in these two counties by the NRVRC and, potentially, the NFS, in its assessment of the MVP project.
2. To obtain landowners' assessments regarding how a pipeline built across their land would impact their ability to live on and use the land in a manner consistent with their cultural orientations. These assessments would be consistent with the cultural attachment data classification category of "absorption" (see Attachment A).
3. To develop community-based, social science research skills in the students taking the class that would enhance their potentials for future employment and abilities to engage in responsible citizen decision-making throughout their lives.
4. To improve students' abilities to not only collect community-based data and information, but analyze it, organize it, and present it in oral and written form in public settings. In this case, the ATP conference and subsequent community presentations.

The Spring 2016 research goals built upon the Fall findings through research conducted in the Virginia Tech Appalachian Studies capstone class on extreme resource extraction issues in the central and southern Appalachian regions. The goals of this class were to incorporate the community-based research of the Fall class into their more theoretical and regional analysis of the proposed construction of these mega-pipelines in several areas of Appalachia. The final poster projects of this class will be displayed at a Virginia Tech-sponsored venue such as the Save Our Towns Summit in September 2016 or the Undergraduate Research Conference in Spring 2017.

The Summer 2016 research goals are for two students to engage in research that will expand the pool of informants for a more comprehensive cultural attachment study along the two proposed pipeline routes in Virginia and West Virginia to be done by faculty at Virginia Tech, the University of Virginia, and Concord University. These students will therefore provide data that will assist in constructing a rigorous proposal for federal funding. Among the outcomes of this more comprehensive research is to assist the Commission in developing effective cultural asset-based initiatives if these mega pipeline projects are built.

1.3.2 Commission Strategic Goals

The research goals described above address the following Commission goals:

1. **Goal 4: Natural and Cultural Assets**
   Strengthen Appalachia's community and economic development potential by leveraging the Region's natural and cultural heritage assets.

By providing materials that can be used to conserve, protect, and develop existing cultural assets, even in the event pipeline construction occurs, this project is assisting in meeting this Commission goal.

2. **Goal 5: Leadership and Community Capacity**
Build the capacity and skills of current and next-generation leaders and organizations to innovate, collaborate, and advance community and economic development.

In engaging Virginia Tech students, many of whom in the classes mentioned above are from Appalachia, in not only reading about but applying community-based research in an actual project, they have developed leadership and project-organizing skills that can advance community sustainability through creative economic development. Students were expected to demonstrate leadership and initiative in setting up interviews, observing community events, and in developing a research plan that advanced research goals in a manner that conformed to stakeholders' values.

1.3.2 Appalachian Teaching Project Goals

1. Efforts to achieve Commission Goals 4 and 5 increased student leadership skills and awareness of cultural assets by students' engagement with community residents in community settings away from the Virginia Tech campus. Students were expected to show leadership and initiative in setting up interviews, observing community events, and in developing a research plan that advanced research goals in a manner that conformed to landowners' cultural values.

2. Efforts to achieve Commission Goals 4 and 5 also promoted active learning by requiring students to engage in at least 40 hours of active community engagement during which they were *doing* tasks with non-students in face-to-face interaction that result in their engagement with and control over the learning process rather than being lectured to or directed by an instructor in a traditional or e-technologies mediated classroom setting.

3. Student research to achieve Goal 4 also addressed the Project goal of engaging in active research to assist communities in creative approaches to sustainability through cultural asset development. Documenting why land and land use is important to long-term residents provides rich information that can inform not only what to invest in culturally, but why and how it should be done. In the case of this project, investigating cultural attachment features embodied a creative approach to sustainability through community input into what factors are absolutely critical to their identity and abilities to self-determine their lives and their family's futures.

4. Other goals included meeting the Scope of Work Outcomes stipulated by the Appalachian Teaching Project (presenting at the conference, preparing a poster, presentations to community partner and a civic organization).

2.0 Activities:

2.1 Activities with Community Partners

The project's community partner, the NRVRC, is the local Appalachian Regional Commission Local Development District office for the New River Valley. Therefore, the project was working with an arm of the Commission. Although the class meetings with Mr. Byrd, NRVRC director, were few, they were very informative and helpful as a result. He was able to articulate the Commission's strategies and goals within the context of the New River Valley, and to suggest ways in which the cultural attachment research could be useful to the NRVRC.

Mr. Byrd met with the class two times: September 8 and November 11, 2015. In both cases, he led discussion and offered insights and critiques as co-instructor rather than as an observer. He reviewed the PowerPoint file and made very useful comments that were incorporated into the presentation during his second visit. His overall contributions were significant, especially in terms of potential impact on Commission-funded projects in the impacted counties due to pipeline destruction of view sheds that would alter the impact of a "mountain vistas," ecotourism, and hiking/biking events, and by the removal of land from agricultural production.

He also talked with project instructor, Dr. Anita Puckett by phone on several occasions and through email. Email correspondence is included as Attachment B.

Finally, ATP students presented their findings to the NRVRC staff on April 29, 2016. Approximately 10 staff members were present. Also in attendance was the director of the Montgomery County Planning Commission. The students responded professionally and skillfully to questions, and staff members indicated that they had learned a great deal from the presentation.

2.2. Research Activities

The research project was submitted to Virginia Tech's Internal Review Board and approved as IRB Project 15-834. Consent forms were administered to all interviewees; all signed. Of paramount importance, given the high emotional levels of locals who were either for or against the MVP and the concern landowners had about MVP surveyors, was to protect the identities of those agreeing to be interviewed. Anonymity was therefore maintained in the interview process and in this report. As a result of this need, photos of students with community residents and of their properties are not included here or in an attachment. Nor are exact dates of interviews with landowners.

During the course of the semester, three pipeline company representatives were contacted to present to the class, including those from the MVP-hired cultural attachment study firm. All declined or didn't return email or phone messages.

Generalized information is captured in the following table

Table 2.2.1
Research Activities

Dates	Activity	Location	Outcomes
Sept. 9-Oct. 14	Identification of all land parcels along proposed route through online GIS data; setting up interviews with landowners likely to have cultural attachment; learning how to conduct interviews, ethnographic research, interview transcription, and content analysis	Classroom site on the Virginia Tech campus	Realization that selection of interviewees had to be those with likely cultural attachment; those who were absentee owners, having short-term residency, or who were corporate landowners had to be excluded *at this time* due to short duration of project.
Oct. 16-Nov. 20	Interviews with landowners took place for a total of 14 subjects. Only two interviews were conducted in Pittsylvania County because of scheduling and distance problems.	Landowners' properties except for one interview held on the Virginia Tech campus.	Fourteen audio-recorded interviews ranging from 30 minutes to two hours in length; student exposure to properties and to off campus communities.
Sept. 10 –Nov. 11	Student visits to one of the grassroots organizations' community meetings	Blacksburg, VA, or Newport, VA	Student awareness of local residents' concerns and actions taken
Nov. 9 – Dec. 2	Students planned their oral presentation and poster for the ATP Conference	Classroom site on the Virginia Tech campus	Poster and oral presentation at the ATP Conference in Crystal City, VA, on Dec. 5, 2015.

A community presentation was made to a Preserve Montgomery County, VA, grassroots organization community meeting on April 14, 2016. Community members in attendance totaled approximately 25 and interest was high, as expected. This well-informed group asked substantive questions regarding the study, which the students handled well. A similar study in Giles County could not be arranged given student schedules and Preserve Giles County meeting times (Monday and Tuesday evenings). Giving such a presentation during the summer research project period (as discussed above) is planned. There was no MVP community venue to which the class could have presented. Results have not been forwarded to the NFS because of the MVP contracting with a professional cultural attachment firm to conduct a preliminary assessment study that was reviewed by the NFS. The student project, as it currently stands, offers no additional information that is not included in the professional study. The results of the Summer 2016 continuation of the project may yield new data, however, which would then be submitted to the NFS.

2.3 Social media or documentation of partner interactions

Because of the need to adhere to interviewee anonymity, no social media or other publication of the study's research data collection or analysis has yet been done. Given that the interactions with the NRVRC director and staff were structured primarily as academic activities, no photos or recordings were made. However, the PowerPoint for the students' ATP presentation is attached as Attachment A. It includes non-identifying photos of landowners' properties. As mentioned above, email correspondence with Mr. Byrd of the NRVRC is attached as Attachment B.

3.0 Project Outcomes

Project outcomes are classified into research, educational, community, partner, programmatic, and student outcomes.

3.1 Research Outcomes

Since research on cultural attachment is ongoing, it is difficult to assess the research outcomes of the project as a whole. However, the following data collected during the ATP research period offer significant additions to the project:

- 14 audio files, eight of which have been transcribed. These offer substantive landowner viewpoints in their own words, thus providing researchers with valuable initial information for the kinds of content analysis necessary in a full research projects, should interviewed landowners agree to participate in a full cultural attachment research project;

- an inventory of who the impacted, or likely to be impacted, parcel owners are with contact information via surface mail. This information is crucial in contacting landowners for a full survey; and,

- initial construction of a confidential community-based information database consisting of those interviewed upon which a full research project can expand through networking and community ethnographic research.

3.2 Educational Outcomes

- Students acquired new research skills that have direct applications to workplace environments in which cross-cultural exchanges and situations are normative;

- Students learned about community constructions of cultural identities orientations and they are important to the future sustainability of Appalachian residents and their communities;

- Students further developed their leadership and personal initiative skills through their implementation of a research schedule and plan of work that, in turn, placed them in face-to-face situations with people they did not know and, in some cases, expressed cultural values and orientations quite different from what they were familiar with;

- Students applied what they had learned in their majors to real-life situations in ways that developed applications of knowledge that they couldn't have attained in traditional classroom settings;

- Students experienced a different pedagogy than they were habituated to (i.e., the classroom or laboratory setting) in a manner that enhanced their self-valuation and validation as valued citizens and human beings; and

- As has been the case every year Virginia Tech's Appalachian Studies students have participated in the Conference, they thoroughly enjoyed their Washington experience. Meeting other students from the other participating colleges and universities was a learning experience they found enlightening, especially in the context of having the opportunity to present and field questions.

3.3 Community Outcomes

Community outcomes center around developing undergraduate research partnerships with various citizens and citizen groups. In so doing, the Virginia Tech motto of Ut Prosim, "That I may serve," is applied by a land grant institution to the region of Virginia in which it is located.

In addition, the project brought objective information and concept of cultural attachment to Montgomery, Giles, and Pittsylvania County citizens so that they could begin to apply it in a more objective and comparative manner to make their own assessments of the potential impacts of the MVP. While many had heard of "cultural attachment," few knew what it meant and how to assess it.

3.4 Community Partner Outcomes

Community partner outcomes are primarily strategic and collaboratory in nature. The NRVRC is now more aware of how the proposed pipeline can impact their efforts to advance Appalachian Regional Commission goals and strategies, and therefore can plan more effectively to accommodate the pipeline, should it be built. In particular, NRVRC supported projects, such as the The Crooked Road and various regional crafts and arts initiatives, could be impacted because the ambient surroundings in which some of these events occur would be less "scenic" and therefore potentially less attractive to tourists. The NRVRC is snow aware of how it will have to mitigate the major transformations to the view sheds along key highways such as US 460 and I-81 in its planning.

In addition, the building of a Virginia Tech Appalachian Studies Program collaboration with the NRVRC was solidified and deepened, such that future collaborations are more likely to occur, thus fostering stronger university-NRVRC efforts to promote common goals.

3.5 Programmatic Outcomes

- The Appalachian Studies Program at Virginia Tech benefitted significantly from this particular project because the impact of the proposed pipeline to local landowners' cultural values was so transparent to the students. The educational impact of the project was immediate and transformative. Furthermore, one student continued to work on the project during the Spring semester in the capstone course discussed above and is continuing his research this summer. This follow-through is enhancing the visibility of both the Appalachian Studies Program and the Appalachian Regional Commission in both counties as student involvement and response is communicated to county residents.

- The project as a whole enhances the educational resources of the Appalachian Studies Program so it can perform its educational mandate more fully, especially for offering more courses, internships, independent research, apprenticeships, and graduate study leading to masters and Ph.D. degrees that focus on Appalachia;

- As has been the case in nearly all other Appalachian Teaching Project Conferences in which Virginia Tech Appalachian Studies students participated, students found the conference experience extremely rewarding. They found the opportunity to listen to presentations from other colleges and universities enlightening and the conversations with these students engaging. They also found the chance to present their research and field questions from the audience professionally useful for future job opportunities. In addition, the extra free time to explore the Washington area was personally satisfying.

- Finally, the partnership with the Commission has, once again, yielded more positive visibility of the Appalachian Studies Program with Virginia Tech administration, at least at the college level, where Appalachian Studies is becoming more valued. Puckett's conversations with Mr. Byrd transcended the specific cultural attachment project, opening up possibilities for future partnerships on community-based projects such as those related to The Crooked Road (see Virginia Tech's ATP reports for 2014 and 2015 for The Crooked Road research).

3.6 Student Outcomes

Among the major student outcomes from the project were

- As a whole, students developed leadership abilities and project planning skills. Each was required to engage with non-campus residents and officials through taking the initiative to plan, execute, and analyze interview data from local residents. Students contacted the land owners, scheduled the event, and then had to negotiate the interview with residents so that they stayed on topic and responded in substantive ways to questions regarding the five components of cultural attachment: kinship, genealogy, relation to land, absorption, work and place relations. They then had to work as a team to analyze and organize their findings so as to construct their final presentation and poster, a professional skill in high demand.

- As a class, students also had to develop and apply professional presentational skills by having to actually present their findings as a team in three venues: the ATP Conference, the NRVRC offices, and in a Blacksburg, Virginia, church to a grassroots community organization.

- On an individual level, one student has continued the project into the summer of 2016, as mentioned above, while another organized a multi-college student trip transversing the length of the proposed MVP, engaging local residents through picnics, potlucks, and community get togethers along the way. One West Virginia resident said that their enthusiasm helped to engage local citizens in knowing more about the cultural and economic impact of the MVP, should it be built. Another student is using the interview and transcription skills acquired in the class as part of her graduate research in public history.

As a result of the extent and depth of these outcomes, students recognize that this class and this ARC initiative is an excellent opportunity for them to obtain the kinds of community-based applications for their education and training in their various majors that will, in turn, assist them in obtaining employment after graduation.

4.0 Problems Encountered

This particular ATP project encountered more problems than many of the others because of the volatile nature of public perceptions of the pipeline project more

generally, and the distrust expressed by MVP employees and most landowners toward each other. These differences have resulted in a certain politicizing of the pipeline project that, in turn, impacted how the Virginia Tech ATP project was constituted and then executed. These problems break down into the following issues:

1. Finding willing landowners who would provide in-depth interviews was somewhat problematic and had to be accomplished through networking rather than by random sampling. For a pilot study of this size and duration, this adjustment was not a significant impediment because one basic variable in cultural attachment studies is was whether the landowner or his/her family had owned the land for a substantial period of time; greater than 50 years was preferred for this study because it meant that more than one generation had lived on the land, thus suggesting that at least two other categories of genealogy and kinship might also be present (see Attachment A). Therefore, whether the landowner was randomly sampled from an inclusive list was not a sampling consideration; whether their family had lived on the land for multiple generations was. However, eventually, what percentage of total parcels do exhibit cultural attachment in both counties is important in terms of revealing the overall significance of cultural attachment for each county. Since only 14 properties from three counties (including the control county of Pittsylvania) were sampled, this pilot study must be considered as a gross indicator that cultural attachment does exist, but not to what extent along the entire Montgomery, Giles, or Pittsylvania pipeline route.

   It should be noted that interviews with approximately three landowners who did not meet the land ownership criterion was done to obtain contrast data that would reveal whether other culture attachment criteria could exist in a multi-generational land ownership vacuum. They did not. Those who families had not lived on a property for more than one generation invariably lacked most if not all of the other cultural attachment criteria as well.

2. Insuring anonymity of study participants was also an issue in that masking identities meant that photos or videos, publicity about the research, media solicitation of participants, and sharing the full text of transcripts (with participants' approval) was impossible without risking subject identification. Revealing the full set of probable pipeline land usage implications reported by landowners was therefore also impossible.

3. While not a "problem" in the long run, focusing the project on testing for just for cultural attachment did constitute a deviation for the broad proposal submitted to the Commission for ATP approval. This focus, however, enriched the project, made it more objective and valid, and offered more specific insights for the NRVRC than a more generalized research agenda would have done. The overall goals of the project were maintained, however, thus supporting the proposal purpose approved by the Commission in August 2015.

4. Finally, the ATP audience evaluations offered some negative comments, in contrast to some very positive ones, that clustered into two general categories: possible bias and too limited a sample size to be useful. Regarding bias, the purpose of the study, to determine if cultural attachment existed, was potentially neutral on whether the MVP would be have positive or negative impact on the future of landowners' cultural attachment to their land. The interviews, however, revealed that all landowners possessing medium or high levels of cultural attachment also felt very strongly, sometimes with high emotion, that the pipeline would destroy their attachment to their land the cultural value system that they had towards it. Those few control interviewees who had little to no cultural attachment to their land also had negative feelings toward the construction of the pipeline, generally for reasons other than cultural attachment. Among them were depreciation of their real estate value, possible well water degradation, loss of use of significant portions of their land for profit because of easement restrictions, and general environmental degradation. In all cases, however, any bias against the pipeline revealed during the students' presentation was intrinsic to the data collected, not to an intentional bias on the part of the project's developer, Dr. Puckett.

   Issues regarding sample size would have much merit if the study were more than simply a pilot study with secondary purposes of educating Virginia Tech students in how to conduct interview and ethnographic community-based research. With only one term to complete the study, with issues in identifying interviewees (see point 1 above), and with students having full schedules with other courses, how many interviews could be conducted was, indeed, a problem. However, 14 is an adequate number statistically to identify possible data trends for this type of research and inform the future study planned for a full study of cultural attachment by university faculty as described in section 1.0. That is, concerns about sample size should be contextualized into the goals and purposes of the project more generally.

5.0 Program Continuation and Sustainability

a. Short-term impact

The short-term impact of the program is to put it on hiatus until after Virginia Tech hosts the Appalachian Studies Association Conference in March 2017. Executing the ATP class is extremely demanding, requiring much more of a time commitment than other more traditional, class-focused courses. Dr. Puckett's time, and the time of other Virginia Tech Appalachian Studies faculty who could teach the ATP course effectively, is and will be committed to making this conference successful; sufficient time to teach a well-planned ATP course is not available until Fall 2017.

b. Long-term impact

The long-term impact of the program is significant, given college and university level interest in what Appalachian Studies has produced over the last 13 years of its

involvement in the ATP and in its impact on Appalachian Studies and community relationships. For example, all websites in the College of Liberal Arts and Human Sciences, in which Appalachian Studies is housed, now creates and edits all program, department, and center websites. In creating a new Appalachian Studies website, it made a point of including a link to the ATP website (http://liberalarts.vt.edu/academics/majors-and-minors/appalachian-studies-minor.html). This level of recognition indicates that the ATP is transcending the level of simply being an interesting class at Virginia Tech. This in turn means that additional university support through project continuation classes, small internal educational research grants, and university-level public relations visibility is more likely.

In addition, the ATP has most definitely advanced the visibility and respect for the Commission and Virginia Tech Appalachian Studies in area communities. Residents, particularly older ones, appreciate being involved in projects they can relate to and that include young university students who are engaged and willing to learn from them. The products of the projects are also valued because they are constructed and distributed in a manner that impacts them directly. Implementing ATP projects with off campus community residents has become easier to do over the years as a result.

Furthermore, students taking this class and participating in the ATP are obtaining jobs because of it. While it is too soon to know if any for this ATP support period have been able to leverage their ATP learning experiences positively towards employment, others in previous years have done so—at least six who a known to Dr. Puckett at this point. Virginia Tech Appalachian Studies wants to continue this outcome if at all possible.

Finally, the ATP has served well as a seedbed for other projects, both by students and by Dr. Puckett. Many students have continued their research in subsequent semesters to enhance their resumes or simply to contribute to and learn more about a given project. So it has been with this cultural attachment project. As described here in section 3.0, this project has led to a planning for a major research project on cultural attachment involving at least faculty from three universities.

6.0 Conclusions and Recommendations

This particular ATP project moved Virginia Tech's involvement into a different dimension of not only providing direction and personnel to meet a community need, but to also implement an actual research agenda that meets social science research protocols and requirements. In so doing, it added another layer to its approach to the ATP, one that it intends to continue in the future simply because it offers a more multidimensional and complex approach to community/university partnerships.

With respect to the ATP itself, it has now reached a relatively stable plateau of institutional/community engagement that results in interesting findings and very helpful insights into the state of the region each year. The dedicated commitment

of Roberta Herrin and her staff, as well as ETSU more generally, have made this success happen "on the ground," so to speak, while the support of the Commission has provided the necessary foundation from which they have been able to build. It has been a privilege to be part of this process.

Finally, one hoped for outcome of this year's project was to bring project findings about a critically important issue to most counties involved in the proposed MVP project to the Commission itself. It is our assertion that the Commission may well be negatively impacted by this corporate project if the concerns by landowners regarding cultural attachment prove to be well founded. It may find that meeting its strategic goals are impeded by the fallout from loss of the material places that have historically nurtured the distinct cultural orientations forming the region, orientations that have been foundational to the Commission's support for cultural asset development. This possibility may not be revealed by a single pipeline project, such as the MVP, but potentially so if the proposed four mega pipelines are built through West Virginia and Appalachian Virginia plus other states (for example, North Carolina). Those of us involved in this project strongly suggest that the Commission begin examining this potential outcome in case landowners' own prognostications prove to be true.

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