

**Appalachian Regional Commission  
Request for Proposals (RFP)**

**Traffic Safety in Appalachia**

**Proposals are due by close of business on  
August 31, 2018**

Appalachian Regional Commission  
1666 Connecticut Ave., NW, Suite 700  
Washington, D.C. 20009-1068

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202-884-7706

# **Appalachian Regional Commission Request for Proposals:**

## **Traffic Safety in Appalachia**

### **I. Overview of Request for Proposals**

The Appalachian Regional Commission (ARC) invites proposals from qualified researchers and consultants to conduct a study regarding traffic safety in the Appalachian Region. The main purpose of this study is to synthesize and analyze traffic safety data in Appalachia compared to the rest of the country, and assess reasons for differences in traffic safety outcomes between Appalachia and the rest of the country, if found to be significantly different. The study will also analyze the impact that the Appalachian Development Highway System (ADHS) has had on traffic safety outcomes and predict the possible crash reduction benefit of completing remaining unfinished corridors. Finally, the study will identify any trends in drug related crashes in Appalachia and assess the possible role of substance abuse issues and the opioid epidemic on traffic safety outcomes in the region.

This research will lead to an improved understanding of traffic safety issues and outcomes in the Appalachian Region compared to the rest of the nation. ARC and partners will utilize findings, coupled with other health-related research findings, to better understand the “culture of health” in Appalachia, ultimately leading to improved policies, strategies and activities to address health issues. State DOTs and local communities in Appalachia may use findings from this study to quantify potential benefits of completing ADHS corridors in their state, potentially referencing this research when conducting benefit-cost analyses as part of USDOT discretionary grant applications.

### **II. Background**

#### ***Traffic Safety Challenges in Appalachia***

Many roads in Appalachia are rural two-lane facilities, through mountainous terrain, with a greater prevalence of hazards (e.g., winter weather, work zones reducing two lane road to one), and conflicts (e.g., hidden driveways, animal crossings) compared to the average road outside of Appalachia. Roads in Appalachia are often unforgiving, meaning a small driver error, such as running off road or over centerline, or swerving to avoid a deer, is often difficult to recover from and can have significant consequences. Much of Appalachia is geographically isolated, often making it difficult or impossible for crash victims to receive necessary medical treatment within the “golden hour” that can determine the likelihood of survival from a crash. Broadband and cellular coverage are spotty in much of the region which presents another challenge in communicating accidents quickly to ensure efficient medical treatment.

In addition to the physical hazards present, the region has a poor “Culture of Health” as presented in a recent ARC [study](#), *Health Disparities in Appalachia*. The study found that the Appalachian Region performed worse than the United States as a whole on 33 of 41 health indicators. For instance, the injury death rate per 100,000 population (which includes motor vehicle deaths) is 33% higher in Appalachia compared to the U.S. as a whole. The poor overall health outcomes may indicate a greater propensity by residents of Appalachia to make riskier health-related decisions compared to the average person outside of the region. Furthermore, this may correspond

with unsafe driving choices, such as choosing not to wear a seatbelt or to text and drive. Although seat belt usage is a strong predictor of survivability in a crash, seat belt usage rates are likely lower in Appalachia versus the rest of the United States, as shown in a 2016 [study](#) titled, *A Comparison of Self-Reported Seat Belt Usage Among the Appalachian and Non-Appalachian United States*.

The recent *Health Disparities in Appalachia* study also referenced the poor socioeconomic outcomes in Appalachia, referred to in the study as “social determinants of health.” According to the study, median household income in the Appalachian Region is 19 percent lower than the national median, and adults ages 25 to 44 are less likely to have some type of post-secondary education in the Region (57.1 percent) than in the United States overall (63.3 percent). The household poverty rate in Appalachia is higher than the national rate (17.2 percent compared to 15.6 percent), and more people receive disability benefits in the Region (7.3 percent) than in the nation as a whole (5.1 percent). These factors are closely linked to health outcomes, including prevalence of injury related deaths such as motor vehicle fatalities.

### ***Impact of the ADHS on Traffic Safety – Past Research***

In 1999, ARC completed a study, *Impact of the Appalachian Development Highway System on Highway Safety*, which highlighted the safety benefits of completed ADHS corridors compared to the windy, two-lane rural roads which most ADHS routes replaced. While the data found in the 1999 study is valuable, it is not sufficient for use in predicting the safety benefits of future ADHS construction. As USDOT discretionary grants and other competitive grant programs become an even more critical funding opportunity, states and communities must be able to prove the quantitative benefits of their projects. One common way to do so is to show the expected crash reduction from building a project, derived from before-and-after data on similar projects.

### ***About Appalachia***

The Appalachian Region, as defined in ARC’s authorizing legislation, is a 205,000-square-mile Region that follows the spine of the Appalachian Mountains from southern New York to northern Mississippi. It includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. Forty-two percent of the Region’s population is rural, compared with 20 percent of the national population.

The Region’s economy, once highly dependent on mining, forestry, agriculture, chemical industries, and heavy industry, has become more diversified in recent times, and now includes manufacturing and service industries. In 1960, about 31 percent of Appalachians lived in poverty; over the 2011–2015 period, 17.1 percent lived in poverty. The number of high-poverty counties in Appalachia (counties with poverty rates at least 1.5 times the U.S. average) declined from 295 in 1960 to 87 in the 2011-2015 period.

These gains have transformed the Region from one of widespread poverty to one of economic contrasts: some communities have successfully diversified their economies, while others still require basic infrastructure such as roads and water and sewer systems. The contrasts are not surprising in light of the Region’s size and diversity—the Region includes 420 counties in 13 states, extends more than 1,000 miles, from southern New York to northeastern Mississippi, and

is home to more than 25 million people.

### ***About the Appalachian Regional Commission***

The Appalachian Regional Commission (ARC) is an economic development agency of the federal government and 13 state governments focusing on 420 counties across the Appalachian Region. Established by an act of Congress in 1965, ARC is composed of the governors of the 13 Appalachian states, as well as a federal co-chair appointed by the president. Local participation is provided through multi-county local development districts.

ARC's mission is to innovate, partner, and invest to build community capacity and strengthen economic growth in Appalachia to help the Region achieve socioeconomic parity with the nation. ARC funds projects that address the five goals identified in the Commission's strategic plan:

1. Invest in entrepreneurial and business development strategies that strengthen Appalachia's economy.
2. Increase the education, knowledge, skills, and health of residents to work and succeed in Appalachia.
3. Invest in critical infrastructure—especially broadband; transportation, including the Appalachian Development Highway System; and water/wastewater systems.
4. Strengthen Appalachia's community and economic development potential by leveraging the Region's natural and cultural heritage assets.
5. Build the capacity and skills of current and next-generation leaders and organizations to innovate, collaborate, and advance community and economic development.

Each year, ARC provides funding for several hundred projects in the Appalachian Region in areas such as business development, education and job training, telecommunications, infrastructure, community development, housing, and transportation. These projects create thousands of new jobs; improve local water and wastewater systems; increase school readiness; expand access to health care; assist local communities with strategic planning; and provide technical and managerial assistance to emerging businesses.

Additional information about Appalachia and the Appalachian Regional Commission can be found at [www.arc.gov](http://www.arc.gov).

### ***About the Appalachian Development Highway System (ADHS)***

Congress established the Appalachian Regional Commission in 1965 to foster economic and social development of the Appalachian Region. In order to promote economic development in Appalachia, Congress authorized ARC to carry out a number of programs, including the Appalachian Development Highway System (ADHS).

From its inception, the ADHS was designed to be an instrument of economic development, linking to national and international markets, improving regional traffic efficiency by connecting to the interstate system, facilitating access to jobs and public services, and opening up remote areas within Appalachia for development and job creation. ADHS corridors were designed to close gaps between markets within the Region, as well as to provide access to markets outside of the Region, and to connect to the Interstate Highway System.

For more information on the ADHS and links to ADHS reports, see <http://www.arc.gov/adhs>.

### **III. Scope of Work**

Proposals must present an outline and description of the research and analysis to be conducted, a work plan, and a schedule for reports and deliverables. The scope of work will require a team of researchers and consultants with a broad set of skills to execute the project. The successful applicant will develop a clear and logical methodology to analyze the topics and key objectives specified in the scope of work. The methodology should include:

- Specification of data sets and methods to be used for each of the proposed analyses, including development of data collection methods and sources of information.
- Discussion of the scope, advantages, and limitations of these resources for the purposes of this analysis, including issues related to local, regional, and national data coverage.
- Specification of the analytical framework, research methods, and statistical/forecasting techniques to be used for the proposed analysis. Proposals should acknowledge the relative merits of various approaches, and outline the advantages and limitations of the selected approach.
- Specification of any proposed stakeholder outreach or other external feedback and input that would directly inform the analysis and modeling.
- Proposed approach to present findings and recommendations.

The following tasks and key work items should be addressed in the design of proposals for this research project. Proposals may offer additional research and policy items to be considered above and beyond the scope described in this RFP that would be advantageous to ARC and its stakeholders.

1. ***Synthesis of Existing Research Related to Traffic Safety in Appalachia***

Synthesize existing research and data related to traffic safety in the Appalachian Region, including any research about traffic safety in a particular state, community or sub-region of Appalachia that may inform research regarding the entire region. The synthesis should also include a review of research regarding the “culture of health” and “safety culture” that may contribute to an understanding of traffic safety issues in Appalachia.

2. ***Data Collection and Analysis***

Collect, compile, and comprehensively analyze traffic accident and related safety data for all United States counties, comparing overall crash rates and crash rates based on key contributing factors between Appalachian counties and non-Appalachian counties. The successful proposer will work with ARC to determine which crash contributing factors should be analyzed and presented as part of this study. ARC envisions the following contributing factors, at a minimum, will be analyzed: restraint use, distracted driving, drugged driving, drunk driving, motorist type (e.g. driver, pedestrian, cyclist), location type (rural or urban), and facility type (e.g. two lane, four lane, interstate, local road, etc.).

The successful proposer is expected to primarily analyze fatal crash data, available through National Highway Traffic Safety Administration's (NHTSA) Fatality Analysis Reporting System (FARS). Additional accident data and other safety data (e.g., seat belt use statistics) may be incorporated depending on availability and quality of data. Annual traffic fatality data is currently available between 1975 and 2016, with 2017 data expected to be released by NHTSA in the near future. The successful proposer should review all years of available fatality data to identify historical trends in traffic safety in Appalachia compared to the rest of the country. The contractor is also encouraged to analyze other health data related to transportation that may contribute to a better understanding of the connection between the "culture of health" in Appalachia and traffic safety outcomes in the region.

If successful proposer is able to obtain vehicle miles traveled (VMT) data for all counties, crash rates should be calculated as crashes per 100 million vehicle miles traveled, as is standard in the traffic safety community. Alternatively, without sufficient VMT data available, crash rates can be calculated based on population (e.g. crashes per 100,000 population).

3. ***A Closer Look at Drugged Driving Trends***

Closely analyze data related to drugged driving, including fatal crash trends, to identify any noticeable links between substance abuse issues and the opioid epidemic in Appalachia and traffic safety outcomes.

4. ***Data Presentation***

The data collected and analyzed for this study must be organized and presented in a clear set of graphs, maps and tables for use by multiple audiences (federal government, regional stakeholders, state departments of transportation, etc.). The contractor will provide examples of how this information and the study results can most successfully be presented and communicated. In addition, database files containing project information and key economic, demographic, and transportation data must be prepared and submitted to ARC.

5. ***Impact of the ADHS on Traffic Safety***

- a. Review fatal crash data (as well as injury crash data, if available) to determine impact of ADHS routes on crash rates compared to conditions prior to ADHS construction.
- b. Using findings from the previous subtask, assess the potential safety impacts of future ADHS construction. Predict expected crash reduction if unfinished ADHS routes are constructed.

6. ***Discussion of Findings, Policy Implications, and Strategic Recommendations***

Summarize key study findings and offer possible explanations for unique trends observed in data. Discuss policy implications of current and future research related to traffic safety in Appalachia. Provide strategic recommendations which ARC should consider to address traffic safety challenges in Appalachia. Primarily using findings related to traffic safety, but also incorporating observations from other health data reviewed as part of this study, discuss the relationship between health and transportation, recommend future research

regarding this topic, and recommend strategies ARC should consider to address issues related to health and transportation.

#### **IV. Deliverables**

The contract will require quarterly progress reports, a draft report, and a final report. The final report must include an executive summary that integrates, summarizes, and interprets key findings of the study. The final report, as well as the executive summary, must be written for a non-technical audience and must include descriptive statistics, analyses, graphs, maps, and tables where appropriate. Technical details, data tables, and details regarding methodology must be presented in appendices.

Contractor must submit one printed copy of the report and two electronic versions: a Microsoft Word file and an Adobe PDF file. Contractor must submit all data collected, analyses performed, and data presentation tools created as part of the study. Contractor may submit relevant data collected as part of the study in a Microsoft Excel workbook or a Microsoft Access database. Contractor will provide metadata (field name description, definition, source, sourced date, and equation if computed) for all raw and computed data fields. If geographic information system maps are developed for the project, contractor must provide map databases, map images, and map documents. ARC will provide contractor with formatting guidance documents for all reports.

#### **V. Technical, Management, and Cost Proposals**

**A. Technical Proposal** *(This narrative should be 15 pages or fewer not including abstract, resumes, or organizational background materials.)*

1. **Summary Abstract (300 words)**

Provide a brief abstract of the technical portion of the proposal by summarizing the background, objectives, proposed methodology, and expected outputs and results of the research.

2. **Methodology**

Describe the step-by-step approach or methods intended to accomplish all tasks specified in this RFP. This section should provide a detailed explanation of the data and methodologies to be used, describe the limits of the selected methods, and justify the selection of these methods over others. The narrative must identify the tasks in this research project that will require participation by ARC staff. Finally, the narrative must identify any difficulties that may be encountered in this project and propose practical and sound solutions to these problems.

3. **Project Work Plan and Milestones**

Describe the phases into which the proposed research can logically be divided and completed. Flow charts should be included as necessary. A schedule of milestones and deadlines must be specified for the completion of various work elements, including information collection, interviews, surveys, analyses, quarterly progress reports, preliminary drafts for review, and final draft reports.

## ***B. Management Proposal***

### *1. Business Management Organization and Personnel*

Furnish a brief narrative description of the organization, including the division or branch planned to perform the proposed effort, and the authority responsible for controlling these resources and personnel.

### *2. Staffing Plan and Key Personnel*

Provide a staffing plan that describes your proposed key personnel and staff distribution to accomplish this work. Describe key personnel performing the research and their role on the project (e.g., project manager, economist, freight analyst, transportation modeling). Brief resumes (two pages or less) of key personnel are required. The selected contractor will be required to furnish the services of those identified in the proposal as key personnel unless ARC authorizes a change in personnel. The staffing plan should present a chart that partitions the time commitment of each professional staff member to the project's tasks and schedule. In addition, the proposal should include a detailed description of activities for key project-related personnel and anticipated deliverables. Finally, the proposal should identify the relationship of key project personnel to your organization, including consultants and subcontractors.

### *3. Relevant Prior Experience*

Describe the qualifications and experience of the organization and the personnel that will be assigned to the project. Include direct experience with the specific subject-matter area and provide examples (via web links and/or printed materials) of the three most-similar research reports your organization has produced. Provide associated organization names, addresses, names of contact persons, and telephone numbers for reference.

### *4. Contract Agreement Requirements*

List any special requirements you want included in the contract.

## ***C. Cost Proposal***

This section must include all cost information. Cost information must be itemized and must include direct labor costs (consistent with the staffing plan), labor overhead costs, transportation, the estimated cost of any subcontracts, other direct costs (such as those for databases), university overhead, total direct cost and overhead, and total cost and fee or profit. Please note that the university overhead rate charged to ARC should not exceed the rate charged to the university's home state.

In addition, ARC requires that the selected contractor travel to four meetings in Washington, D.C.—one meeting with ARC staff to kick off the project, two interim project update meetings, and at least one formal presentation and discussion of key findings with ARC officials at the conclusion of the project.

## **VI. Cost and Timing**

ARC rates this RFP as a **medium-scale project** in the \$75,000 to \$149,000 range, according to the Commission's rating of the level of effort for conducting research.

The contract awarded for this research project will be a FIRM FIXED-PRICE CONTRACT, with payments on a quarterly schedule. The contract scope of work and budget shall remain firm during the project. The project should be completed within 12 months.

## **VII. Evaluation of Proposals**

All proposals will be evaluated based on the following criteria:

- Complete, clearly articulated, and logical study design;
- Technically competent methodology;
- Qualifications, relevant prior experience, command of existing research on telecommunications and technology issues, and ability to present findings in a useful manner;
- A credible management proposal for staffing, and the capability to carry out and support the project in a timely fashion;
- The quality of interviews, focus groups, surveys, and/or case study protocols proposed.
- The cost-effectiveness of the proposal.

It is anticipated that (a) contractor(s) will be selected by mid-to-late September 2018.

## **VIII. Proposal Submission**

***Proposals are due by close of business on August 31, 2018.***

An original and three hard copies of the proposal must be submitted to:

Ryan Brumfield  
Regional Planning and Research Division  
Appalachian Regional Commission  
1666 Connecticut Ave., NW, Suite 700  
Washington, D.C. 20009-1068

In addition to the hard-copy submission, ***proposals must also be emailed on or before the deadline*** to [rbrumfield@arc.gov](mailto:rbrumfield@arc.gov). Email attachments should be no more than 10 MB.

Questions about this proposal should be directed to Ryan Brumfield, at [rbrumfield@arc.gov](mailto:rbrumfield@arc.gov) or 202-884-7706.