4. Findings and Conclusions

4.1 Summary Findings

4.1.1 Study Process Background

The critical role of transportation infrastructure to the economic development of Appalachia led to the creation of the Appalachian Development Highway System (ADHS), a 3,090-mile network of highways in 13 states. The ADHS, which encompasses 26 highway corridors, is overseen by the Appalachia Regional Commission (ARC). At the end of FY 2009, approximately 87 percent of the miles had either been completed or were under construction. Corridors in the highway system were selected to accomplish one or more of the following goals:

- Link major economic centers in Appalachia, which were bypassed by the Interstate Highway System, restoring locational advantages that they had lost by being bypassed.
- Help close the gap between key markets on either side of Appalachia that were not linked by the Interstate Highway System, so that the region could then capitalize on the alterations to in inflows of commerce induced by additions to the highway system.
- Open up large areas of Appalachia with significant potential for recreational development.
- Enlarge the commuting fields for the major job centers in and around Appalachia by constructing a new highway system that would enable people to travel greater distances in less time to the jobs and services being added.

4.1.2 North-South Appalachian Corridor Study

A recent study illustrated the meaningful economic benefits that have been created so far from the completed ADHS corridors. With the same emphasis on the potential economic benefits of improved highway access, the current North-South Appalachian Corridor Study was undertaken to evaluate the relative engineering and environmental feasibility and likely economic benefits associated with corridor improvements being considered along portions of four highways within portions of Maryland, Virginia, West Virginia, and Pennsylvania.

The Study Area, including 21 counties in four states, extends from the next proposed segment of Corridor H and I-66 on the south to the Pennsylvania Turnpike on the north, and from just west of the West Virginia-Maryland state line on the west to just east of I-81. With the exception of the four Virginia counties and the two easternmost Pennsylvania counties, all of the Study Area's counties are within the Appalachia Region as defined by the ARC. The Study Area is divided into southern and northern areas by I-68, which is designated as Corridor E.

Seven different corridors were studied. The four southern corridors generally followed US 219 / Meadow Mountain, US 220, US 522, and I-81. The three northern corridors generally follow the existing alignments of US 219, US 220, and I-81. Except for the portions of US 219 and US 220 north of I-68, which are part of Corridors N and O respectively, none of the other north-south corridors under

consideration are part of the presently designated ADHS. (I-68 is ADHS Corridor E.) However, many of the same goals behind the development of the ADHS are relevant to the present study.

The highway improvements assumed for each corridor (except I-81) include a four-lane divided highway with at-grade intersections. Between the public road intersections, the highway would be access controlled, prohibiting private entrances. Interchanges could be provided to some intersecting arterial highways.

4.1.3 Study Components

To assess the feasibility and relative benefits of improvements to each of these corridors, the corridors were evaluated for their potential economic benefit, traffic service improvement, environmental impacts, and engineering considerations and cost.

Table 4 -- Summary of Private Sector Job Growth Significantly Supported by North-South Highway Improvemenet - 1998 to 2008

Corridor	Development Zone	1998 Job Base	Growth in Number of Jobs	Percent of Jobs (1*)
Southern Corridors - Corridor H / I-66 to I-68 / MD/PA State Line				
US 219 / Meadow Mountain	Zone 1S	31,152	2,270	7%
US 220	Zone 2S	52,443	8,230	16%
US 522	Zone 3S	18,316	1,170	6%
I-81	Zone 4S	214,569	7,200	3%
Northern Corridors - I-68 / MD/PA State Line to Turnpike (I-76)				
US 219 / Meadow Mountain	Zone 1N	35,629	2,510	7%
US 220	Zone 2N	30,679	1,510	5%
I-81	Zone 4N	223,559	8,058	4%

(1) Job growth significantly supported by north-south highway improvements as a percent of total 1998 jobs in the corresponding economic development zone(s).

Economic Assessment

This process generated an estimate of the potential range of job growth in each corridor for which the proposed improvement would be a significant factor. Reviewing these estimates and impact on employment (listed in Table 4-1) resulted in the following discussions:

- Areas along the I-81 corridor have the largest existing job base and population levels and the highest projected job growth. However, given the long-standing presence of a north-south Interstate highway, north-south highway improvements were not as relatively important to job growth as in other zones.
- In the Southern Study Area south of I-68, the US 220 Corridor (2S) would support the largest number of potential new jobs. In addition, these jobs represent a more significant impact to the economic health of the zone, given the historically lower level of incomes and job opportunities in those areas.

- In the Northern Study Area north of I-68, the US 219 Corridor (1N) would support the second largest number of new jobs in Pennsylvania. As with the US 220 Corridor south of I-68, these new jobs would offer a more significant impact to the economic health of the zone because of past trends of existing employment and income levels.

Table 4 (New) -- Summary of Private Sector Job Growth Significantly Supported by North-South Highway Improvement - 2008 to 2018

Corridor	Development Zone	2008 Job Base	Growth in Number of Jobs	Percent of Jobs (1*)
Southern Corridors - Corridor H / I-66 to I-68 / MD/PA State Line				
US 219 / Meadow Mountain	Zone 1S	37,310	2,270	6%
US 220	Zone 2S	55,980	8,230	15%
US 522	Zone 3S	21,082	1,170	6%
I-81	Zone 4S	255,952	7,200	3%
Northern Corridors - I-68 / MD/PA State Line to Turnpike (I-76)				
US 219 / Meadow Mountain	Zone 1N	36,215	2,510	7%
US 220	Zone 2N	32,631	1,510	5%
I-81	Zone 4N	240,476	8,058	3%

(1) Job growth significantly supported by north-south highway improvements as a percent of total 2008 jobs in the corresponding economic development zone(s).

Traffic and Transportation Analysis

Current and future conditions for the Study Corridors, including Level of Service (LOS), Average Daily Traffic (ADT), and percent trucks, were analyzed to evaluate the traffic flow characteristics of these roadways. This analysis found that:

- US 219 Corridor (1S) and US 220 Corridor (2N) are currently operating at levels of service A-C. In 2020, without improvements, US 219 Corridor (1S) would remain at LOS A-C except for one segment, but US 220 Corridor (2N) would deteriorate to LOS D and E-F. They would remain at LOS A-C with the proposed improvements in 2020.
- The US 219 Corridor (1N) and US 220 Corridor (2S) currently have highway segments with LOS D, US 522 Corridor (3S) has segments with LOS E or F, and the I-81 Corridors (4S and 4N) have some segments with LOS D, E, or F. Without improvements in 2020, US 219 Corridor (1N) would have segments at LOS D and E-F. US 220 Corridor (2S) would have segments at LOS E-F. US 522 Corridor (3S) and I-81 Corridors (4S and 4N) would deteriorate to LOS E-F. With the proposed improvements, roadways in all corridors would operate at an LOS A-C, except for segments of I-81 which would be at LOS D and E-F (near Hagerstown, Maryland and west of Harrisburg, Pennsylvania).
- Except for I-81, which does not have “no passing” zones, improvements along each corridor would eliminate long stretches of “no passing” zones and would either eliminate or provide a bypass of areas with above average accident rates.

Environmental Assessment

The evaluation of impacts to the cultural, natural, and park resources identified the following points:

- In the Southern Study Area, impacts to natural resources are greater in the western corridors – US 219 Corridor (1S) and US 220 Corridor (2S) – while potential cultural resources impacts are distributed along all the corridors, with the most along Corridors 1N, 4S, and 4N.
- In the northern study area, improvements along the US 219 Corridor (1N) have the largest potential impact to natural resources. Impacts to natural resources are somewhat less in the US 220 Corridor (2N) and are the least along the I-81 Corridor (4N). The I-81 Corridor is in close proximity to the most cultural resources. The US 220 Corridor has the next largest number while the US 219 Corridor has the least.
- Also, there are several parks and recreational lands adjacent to the existing roadways. US 220 Corridors 1S and 1N have the greatest number of such areas, with I-81 Corridors 4S and 4N having the least.

Engineering Considerations

All corridors – both north and south – have specific challenges to the design and construction of roadway improvements. In western areas, the terrain throughout the corridors ranges from mountainous with steep ridges to rolling hills.

For the US 219 and US 220 Corridors, much of the proposed improvements would be on new alignment. US 522 would include some new alignment, but most improvements would be to existing roadways. All of the improvements to I-81 would be within the existing right-of-way, except for the improvements to the interchanges. The improvements range in cost from about $340 million to about $830 million.

4.2 Priority and Ranking of Improvements

The Study Team then compared and analyzed each corridor's roadway conditions (physical and traffic capacity) along with its economic potential to categorize the needed improvements. The priority was based on each corridor's ability to serve interstate commerce. By comparing the extent of traffic congestion or available capacity with each corridor's economic potential, the Study Team was able to create a relative prioritization of where improvements would be most beneficial.

From the analysis, two corridors – one each in the Southern and Northern Study Areas – were identified as having the greatest potential to support Appalachian economic development. These corridors are:

- US 219 Corridor (1N) between I-68 in Maryland and the Pennsylvania Turnpike (I-76) in the north, and
- US 220 Corridor (2S) between I-68 in Maryland and Corridor H in West Virginia in the south.

Given these findings, it is recommended that – from an economic development standpoint – these two corridors be given high priority for future upgrades. Improvements in these corridors have the greatest

potential for supporting job growth and contributing to an improved regional standard of living and quality of life.

The US 219 Corridor (1N) and US 220 Corridor (2S) will be developed consistent with Maryland's Smart Growth legislation. In addition, further planning would be carried out to embrace the Smart Growth philosophy regarding access, environmental compatibility, and the scenic qualities of the corridor.

4.3 Funding Source Options

Implementing improvements along the high priority corridors, which demonstrate significant public benefits, will likely require the use of various federal funding programs aimed at highway projects. To qualify for these programs, the sponsoring agencies will have to demonstrate that the proposed improvements will provide meaningful transportation and other benefits. While most north-south routes are part of the NHS, their funding source, which is used statewide, is not adequate to develop a new major corridor.

4.3.1 Project Benefits

As shown in the previous sections, the proposed improvements would provide the region with significant benefits in supporting economic development and job growth. However, the improvements would also benefit users of the larger regional transportation network. Following are some of the potential benefits.

- **Travel-Time Savings.** Improved roadways in these corridors translate into travel-time savings. Travel-time savings directly benefit automobile users and the commercial vehicle operators that move commodities over the existing highway network
- **Increased Tax Revenue.** The increased economic development supported by the highway improvements would lead to increased tax revenues. The direct and indirect economic impacts to secondary industries are commonly known as "multiplier effects." Efficiency gains in one economic sector spur increased productivity in related sectors. One measurable result of the multiplier effects on the regional economy is the increased collection of local and state tax revenue.
- **Reduced Highway Accidents.** As the improvements eliminate segments of higher than statewide average accident rates, the number and severity of traffic accidents should decline. This safety benefit accrues directly to automobile and commercial vehicle operators using the improved roadways.

4.3.2 Funding Sources

The range of benefits from the proposed improvements indicates the potential applicability of certain funding sources. The following is a listing of some of the potential funding sources.

Federal Sources

A number of the programs authorized under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) would be the most likely sources of federal funds for these projects. SAFETEA-LU, the successor legislation to the Transportation Equity Act for the 21st Century (TEA-21) and 1991 Intermodal Surface Transportation Efficiency Act (ISTEA), continues to support investments in highways, as well as alternative systems such as mass transit and rail freight.

SAFETEA-LU, TEA-21, and ISTEA signify a change in national policy to support a multi-modal strategy for transportation. It is anticipated that as this strategy is further developed, funding programs will become more expensive in supporting improvements that respond to local economic needs. The existing SAFETEA-LU gives a hint of the possible range of funding sources that may be available in the future. Following are some of the programs that might be the most promising for funding of these corridor improvements.

The major problem with SAFETEA-LU, however, is the removal of the toll credit language from the previous bill. Sometime during conference, language was removed from the legislation that essentially prevents states from using toll credits as their match for any ADHS roadways. Currently (March 2010), The North/South Appalachian Highway Coalition is actively advocating the inclusion of said language in the upcoming transportation bill. Doing so will greatly increase the likelihood that proposed projects will get completed, particularly in Pennsylvania.

- **Appalachia Highway Development System.** All of the counties along US Route 219 are included in the Appalachian Regional Development Program enacted by Congress over 40 years ago. The policy was designed to promote development of the Appalachian communities and a highway network titled Appalachian Corridors. Corridor N follows US 219 from I-68 (Corridor E) to Ebensburg and intersects with Corridor M (US 22). The northern segment of Corridor N has been constructed as a four-lane highway with controlled access: a 25-mile southern segment remains incomplete.
- **NAFTA Corridor / Continental One World Trade and Travel Corridor.** This designation is currently being sought for a new economic development corridor from Buffalo, New York to Miami, Florida. Designation of US 219 Corridor (1N) and US 220 Corridor (2S) as a "Continental One" alignment could provide a logical funding source.