## THE ACE TRANSPORTATION CLUSTER COALITION: Main Narrative

The Automated-Connected-Electrified (ACE) Transportation Cluster Coalition will establish Southwest and Southern Virginia as a global leader in next generation transportation by creating the most advanced, real-world test environments for ACE vehicles and delivery technologies. The ACE Coalition leverages a strong cluster of regional economic assets, driving **technology-based economic development** and creating a more **resilient** economy. The Coalition includes a top engineering university, pioneering research assets, major truck manufacturers, and groundbreaking autonomy firms. Together, we will accelerate the development, deployment, and **sustainability** of next generation vehicle technologies, and **equitably distribute** economic opportunity among distressed, **coal-impacted communities** and historically **excluded** populations. Fueling manufacturing investment and innovation, the Coalition will generate more than $5 billion in economic impact and 5,000 jobs in Southwest and Southern Virginia.

Southwest and Southern Virginia has struggled to **recover** from the decline of coal and traditional manufacturing. This largely rural region is fraught with shrinking GDP, personal income, and labor pools.[1] Simultaneously, the region's transportation cluster remains nationally competitive and has made significant strides in adapting to market needs. Today's economy relies on rapid delivery of goods, as evidenced by strained supply chains during the COVID pandemic. Truck freight demand grew 6.0% in 2020, fueled by the shift to E-commerce. The World Economic Forum projects freight demand to triple by 2050.[2] These strains lead to **environmental** degradation of roadways and air quality, create a tight and struggling workforce, and can cost manufacturers between $10,000 and $100,000 per minute of unplanned production stoppage.[3] Professionals are turning to ACE land and air vehicles to address these challenges.

ACE land and air vehicle technologies, face many hurdles to full implementation: 1) poor resource alignment including business and technical assistance, education, and **workforce** training; 2) unprepared and under skilled workers; 3) limited access to real-world test environments to spur commercialization and business development; and 4) fragmented supply chains. The Coalition will address these hurdles, focusing on global market demands, while establishing a **resilient** and **equitable** economy across Southern and Southwest Virginia. The projects described below (See Figure 1) collectively address these needs, aligning with the goals of many regional organizations including six EDA-supported, Economic Development Districts.

1) **The Talent, Innovation and Technology Assistance Network (TITAN)** will link and leverage education, training, manufacturing extension, and business assistance assets across the region. TITAN will transition cluster businesses to Industry 4.0, provide **equitable** access to programming, assist in the training of at least 1,900 workers, and grow jobs across the region. This will have an economic impact of $1.9 billion over the 5-year grant. (Per EDA, this project has separate programmatic and construction proposals, TITAN &TITAN-MNF)
2) **The Automated-Connected-Electrified (ACE) Corridor-Ground** will create the nation's most advanced real-world test environment for development of automated and electric heavy vehicles. The Corridor will work with at least 30 businesses, half of which will be small,

[1] Dragas Center for Economic Analysis and Policy (2021). State of the Commonwealth Report. Old Dominion University. https://ceapodu.com/wp-content/uploads/2021/12/2021SOC-FINAL-121621-.pdf

[2] FTR Transportation Intelligence (September 2021). "C-Suite Synopsis for September 2021." *State of Freight Insights*. Retrieved from: https://today.ftrintel.com.

[3] Thanou, E & A. Matopoulos (2021). "Improving efficiency of material flows in an automotive assembly plant: A case study." *CIRP Journal of Manufacturing Science and Technology 35 (2021) 959-967.*

women- and minority-owned (SWaM) businesses or those from distressed or **coal-impacted** communities. It will also help to attract at least seven new regional businesses. Situated along Virginia's interstate 81 (I-81), the project will lead in reducing $CO_2$ emissions, enabling safe automated driving, and promoting **technology-based economic development**.

3) **The ACE Corridor-Air** will create a national testbed for drone delivery technologies and their integration into transportation and logistics operations. The Corridor will work with at least 30 regional companies, half of which will be SWaM-owned or come from distressed or **coal-impacted** communities. These services may lower operational costs up to $250,000 per firm annually. This real-world test environment allows businesses to adapt operations to prevent **environmental** degradation due to traffic congestion and workforce shortages.

4) **The ACE Transportation Cluster Coalition Governance** will ensure **equitable engagement** among stakeholders across the region. A policy board of senior leaders from key public, private, and non-profit partners, an engagement council of local economic and workforce development leaders, and groups of project advisors with subject matters expertise on technology, training, and technical assistance will work together to provide open and transparent leadership to advance all the projects. Governance participants will support business and job growth that is **equitably distributed** around the region. They will also identify institutional and financial approaches to sustain these efforts after the grant.

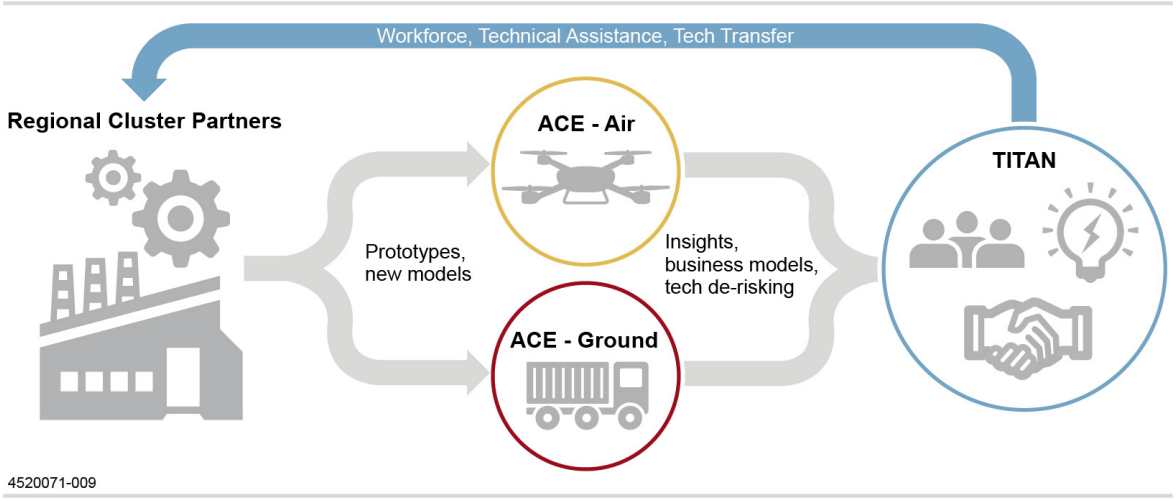


*Figure 1. Transportation Cluster Coalition Projects and Collaboration*

Outcomes from EDA-funded activities include an addition of at least 5,100 **well-paying, quality cluster jobs** through existing firm growth, new business attraction and creation. This will touch at least 60% of counties and cities in the region and increase involvement of historically **excluded populations or distressed and coal-impacted communities** in cluster-related postsecondary programs and jobs by 20%. The economic impact from these efforts will by $5.1 billion, a 68-1 return on the $75 million investment requested from EDA.

Projects begin in year 1 with partner coordination, program development and implementation. Construction of a TITAN hub facility occurs in years 1-3. Program implementation for all projects occurs years 2-5, alongside evaluation of **cluster growth** and **equity**. In years 3 through 5, project sustainability plans will be developed and implemented.

## Regional Description

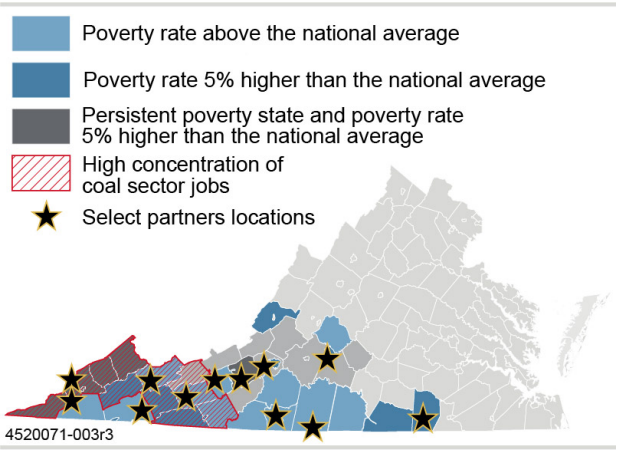


*Figure 2. Southern and Southwest Virginia*[4]

Southwest and Southern Virginia are disadvantaged as coal and traditional **manufacturing** fade.[4] About 69% of counties have per capita incomes below 80% of the U.S. PCI, and labor participation is 10% below the nation. Figure 2 highlights large pockets of distress. When assessing regional disparity, the Blacksburg, Roanoke, and Lynchburg metropolitan areas maintain relative prosperity in the region, with most counties' PCI and poverty rates comparable to the nation. In contrast, other counties have seen a 5.4% job decline (2016-2021) and a 14.6% poverty rate.[5] The Coalition will spread the prosperity felt by more urban centers of the region, to those in more distressed communities through better alignment and engagement of resources and supply chains.

This regional reinvigoration will leverage unique **industry cluster leadership.** The region boasts one of the largest collections of truck manufacturing plants in the nation including OEMs Mack, Volvo, and Morgan-Olsen. Volvo, one of the three largest truck manufacturers globally, has its flagship facility here, where they manufacture full-size electric trucks. Daimler, another Big 3 truck manufacturer, purchased the region's largest autonomy firm, TORC Robotics, to spur development of autonomous trucks. This region hosts one of the only commercial drone delivery services in the U.S. by Google Alphabet subsidiary, Wing. Parts suppliers like Eldor Powertrains are also scattered across Southwest and Southern Virginia.

Figure 3 defines the cluster. Comprised of 31 industries, it employs 78,957 workers, 11.3% of total regional jobs, and contribute 15.8% to the regional GDP. The cluster is expected to grow 3.5% by 2027; with EDA-funding, the Coalition expects to accelerate that growth to 6.5%.[6] Success of the component projects describe in this larger proposal hinges on **industry leadership** and mobilization of **regional assets** like education, research, and business assistance programs. Cluster businesses, employees of those businesses, and the entire region will benefit (including **historically excluded populations**, and distressed and **coal-impacted communities)**. Such broad-based and **equitable growth** only occurs with intentional effort. As mentioned earlier, the region contains three small-but relatively prosperous Metropolitan Statistical Areas (MSAs) surrounded by more rural areas. Many key assets, including Virginia Tech and cluster firms focused on new and emerging technologies, are in those MSAs. Their connections to other firms and value-chain contributors in less prosperous parts of the region are real and organic. **Industry leadership** recognizes and supports this interdependence.

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[4] This region consists of these counties: Alleghany (51005), Amherst (51009), Appomattox (51011), Bedford (51019), Bland (51021), Botetourt (51023), Brunswick (51025), Buchanan (51027), Campbell (51031), Carroll (51035), Craig (51045), Dickenson (51051), Floyd (51063), Franklin (51067), Giles (51071), Grayson (51077), Halifax (51083), Henry (51089), Lee (51105), Mecklenburg (51117), Montgomery (51121), Patrick (51141), Pittsylvania (51143), Pulaski (51155), Roanoke (51161), Russell (51167), Scott (51169), Smyth (51173), Tazewell (51185), Washington (51191), Wise (51195), Wythe (51197), Bristol City (51520), Covington City (51580), Danville City (51590), Galax City (51640), Lynchburg City (51680), Martinsville City (51690), Norton City (51720), Radford City (51750), Roanoke City (51770), Salem City (51775)

[5] United States Census (2022). American Community Survey 2019 5-year Estimates; Emsi Burning Glass. Emsi Developer 2022.1 dataset. http://economicmodeling.com.

[6] Emsi Burning Glass. Emsi Developer 2022.1 dataset. http://economicmodeling.com.

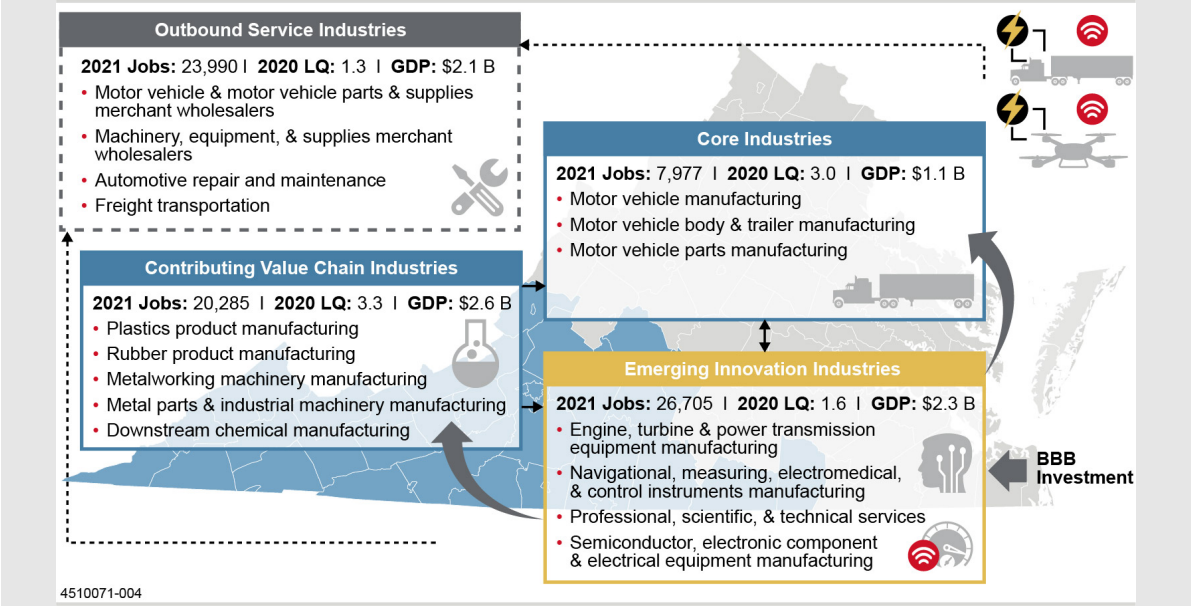



*Figure 3. Regional Transportation and Logistics Cluster*

To reach this goal, the Coalition will build capacity to **manufacture** and implement **technology-enabled** ACE vehicles to usher in the next generation of transportation in Southwest and Southern Virginia (See ACE Corridor narratives). This capacity depends upon a **technologically skilled workforce**, adept at the transformational changes that must accompany the adoption of these technologies. The region has significant untapped potential to meet these workforce needs with the targeted preparation that TITAN will provide (See TITAN narratives).

## Cluster Sustainability

As an initial step, Figure 4 displays the Coalition governance structure. We will formalize these relationships through memorandums of understanding among Coalition partners, including operational agreements with the two ACE Corridors and TITAN (See Governance narrative).

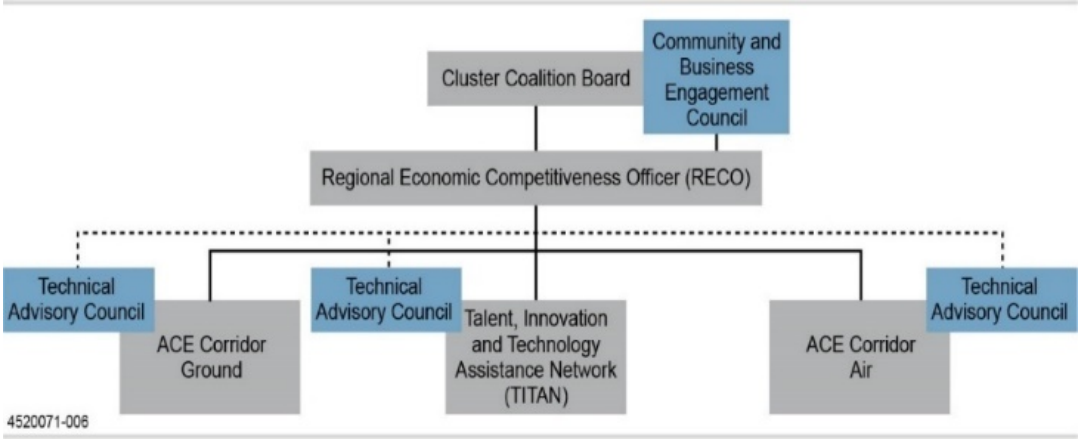



*Figure 4. Cluster Coalition Governance Structure*

After the five-year performance period, The ACE Transportation Cluster Coalition Governance project will transition to an independent organization, sustaining Coalition efforts. This organization will be self-sustaining based on a public-private investor model, common among and supported by our regional organizations. The Talent, Innovation and Technology Assistance

Network (TITAN) will continue at the end of the grant to affiliate with the Coalition, supporting a network navigator for industry through revenue generated by the TITAN facility located at the Virginia Tech Corporate Research Center. Services offered by universities, community colleges and others across the network will move to an industry sponsorship model, supplemented by targeted grants and philanthropic support. Similarly, The ACE Corridors, Ground and Air**,** will continue their affiliation with the Coalition and TITAN. Managed by the Virginia Tech Transportation Institute and Mid-Atlantic Aviation Partnership, the Corridors will move to an industry sponsorship model supplemented with grant and philanthropy funding.

The Coalition's partners have a long track record of initiating **durable self-sustained** activities. Both Corridor project leads—Virginia Tech Transportation Institute and Mid-Atlantic Aviation Partnership—operate extensive, self-supporting, ground and air testing infrastructure, conducting applied R&D for industry and government clients. Virginia Tech has catalyzed R&D spinouts such as the Institute for Advanced Learning and Research (est. 2002), which works with Southern VA partners to diversify, transform, and grow the economy. The Global Center for Automotive Performance Simulation (est. 2010), which provides simulations, testing, research, and assessments for transportation industry partners. **Regional industry partners,** TORC, Aeroprobe, Techsburg, AVEC, NAVOS Air, Golden Section and Cowden Technologies are all university spinoffs at various levels of maturity. As a regional convener, Virginia Tech Center for Economic and Community Engagement is the staffing agency for an industry-led GO Virginia council, which provides seed grants to catalyze regional initiatives, **sustain them through other investments,** and grow higher wage jobs and investment in innovative clusters.

The cluster region is already poised for the **technological** changes necessary to adapt to global demands. EDA investment in the Coalition provides critical investments needed to strengthen and accelerate the region's role shaping industry transformation, while providing for **equitable growth**, flexibility, and building regional **resilience**. The two Corridors will address the most critical barriers to industrial adoption and commercialization of ACE ground and air vehicles. TITAN and the Coalition will build inclusive transformation of the regional cluster through outreach, technical assistance, and **workforce developmen**t. Each of these projects also has plans for sustaining their activities and adapting to changing cluster needs.

Each component project is designed to **integrate with other public or private investments** to leverage existing assets and initiatives to create a regionwide network for **cluster developmen**t. For instance, TITAN education partners are already using state-supported funding to address critical digital **workforce** needs in computer science and electrical engineering. The ACE Corridor-Ground is integrated with the Virginia Department of Transportation's existing I-81 Improvement Plan by extending a proposed corridor to incorporate heavy vehicle automated driving and infrastructure testing. The ACE Corridor-Air builds off private and public investments to include NASA's UAS (Unmanned Aerial System) Traffic Management program and the FAA's Ground Based Surveillance System for unmanned aircraft system traffic management. Both Corridors are expanding on the existing expertise, **durable** partnerships with **industry leaders**, **regional stakeholders**, and resources from the Virginia Tech Transportation Institute and the Mid-Atlantic Aviation Partnership.

**Private Sector Participation**

The Coalition responds to regional **industry-led** priorities including more accessible technology testbeds and greater networks for tech transfer, increased business development support, and expand talent development. Virginia Tech, with regional economic developers, works closely

with businesses in this cluster to support their growth. In recent years, industry leaders, government, and education partners have developed a plan for strengthening the cluster through **technology and workforce advancement**, but an influx of startup funding is needed.

| | TITAN | ACE-Air | ACE-Ground | Match |
|---|---|---|---|---|
| **Cluster Coalition Board Members** | | | | |
| Appalachian Power Co | | | X | Employee time and resources |
| Mack Trucks | X | | X | |
| Raytheon | X | X | | Employee time and internship program |
| TORC (Daimler Truck) | X | | X | |
| UPS Flight Forward | X | X | | Employee time and resources |
| Volvo | X | X | X | Equipment, land donation, employee time and resources |
| Verge | X | | | |
| **Technical Advisory &/or Community and Business Engagement Members** | | | | |
| Aeroprobe | | X | | |
| AFT, Inc | | X | | |
| ANRA | X | X | X | Employee time and resources |
| AVEC | | X | | |
| Commonwealth Cyber Initiative | X | X | X | Cyber security tasks and employee time |
| Cowden Technologies | | X | | |
| Elbit Systems | X | X | | |
| Frost Technologies | | | X | |
| GCAPS | | | X | |
| Genedge | X | | | |
| Golden Section LLC | | X | | Employee time and resources |
| IALR | X | | | Employee time and resources |
| MELD Manufacturing | X | | | Equipment |
| MyRadar | | | X | |
| NAVOS Air | X | X | X | Employee time and resources |
| NEC | | | X | |
| New River Valley Airport | | X | | |
| Nira Dynamics | | | X | |
| RiverLink Group | | | | Employee time and resources |
| Techsburg | | X | | |
| **Supporters, Beneficiaries and Future Coalition Board/Council Members** | | | | |
| AT&T | | | X | |
| AUVSI (National) | | X | X | |
| AUVSI Ridge and Valley Chapter | | X | X | |
| Carter Machinery | X | X | | |
| CVSA | | | X | |
| GEFERTEC, LLC | X | | | Equipment |
| Morgon Olson | | | | |
| Norfolk Southern | | | X | |
| SAE Foundation | X | | X | STEM programming |
| SAE International | X | | | |
| SAMAD Aerospace | | X | | |
| Sonny Merryman | | | X | |
| VA Clean Cities | | | X | Employee time and resources |
| Wing | X | | | |

*Figure 5. Private Sector Participation*

During Coalition development, 34 individual **industry leaders** provided technical input as project team members; identified use-cases for the two ACE Corridors; agreed to participate in Coalition governance; offered support for curricular development, experiential learning opportunities, technical assistance projects, and business development programming and networking for SWaM firms and business in distressed and coal-impacted communities across the region. Figure 5 shows a list of private sector partners and their roles. Note that organizations on the Coalition Board are also members of one or more Technical Advisory Councils.

## Community Partnerships

The Coalition will form a **Community and Business Engagement Council (CBEC)** consisting of partners with expertise in economic and workforce development and related topics, drawn

from public agencies, business support nonprofits, and regional community organizations such as EDA-supported Economic Development Districts (EDD). This body will be the voice of the community that guarantees the Coalition will capitalize on emerging opportunities for **equitable** growth across the region. They will work with the Coalition Board, projects, and staff to ensure maximum participation in the Coalition and distribution of benefits to all types of firms in **coal-impacted** communities and underrepresented populations across the region. CBEC members include: Botetourt County, Cumberland Plateau Planning District Commission (PDC), Central Virginia PDC, Lenowisco PDC, Lynchburg Regional Business Alliance, Montgomery County, Mount Rogers PDC, Mount Rogers Regional Partnership, Virginia Career Works New River-Mount Rogers Region, New River Valley Regional Commission, Onward NRV, Pulaski County, RiverLink LLC, Roanoke County, Roanoke Regional Partnership, Roanoke Valley-Alleghany Regional Commission, Virginia Coalfield Economic Development Authority, Virginia Innovation Partnership Corporation, and Wythe County Joint Industrial Development Authority.

Partners are engaged in other complementary initiatives **integrating the Coalition with other private and public investments** to address critical talent and technology challenges and support growing regional jobs and investment. For example: 1) workforce development board partners in Blacksburg and Roanoke have ongoing sector-driven partnerships supporting manufacturing and IT firms important to this cluster; 2) several partners, including UVA Wise and the Virginia Tech Corporate Research Center, provide unique support to companies managing remote workforces; 3) the Virginia Economic Development Partnership and the GO Virginia program are providing all of our educational partners with new state funding and technical support for aligning educational programs, internships and related opportunities into talent pipelines meeting industry demands; 4) NASA Langley, Virginia State University and other HBCU[7] partners are building accelerator cohorts and will work with us to bring underrepresented entrepreneurs to our region.

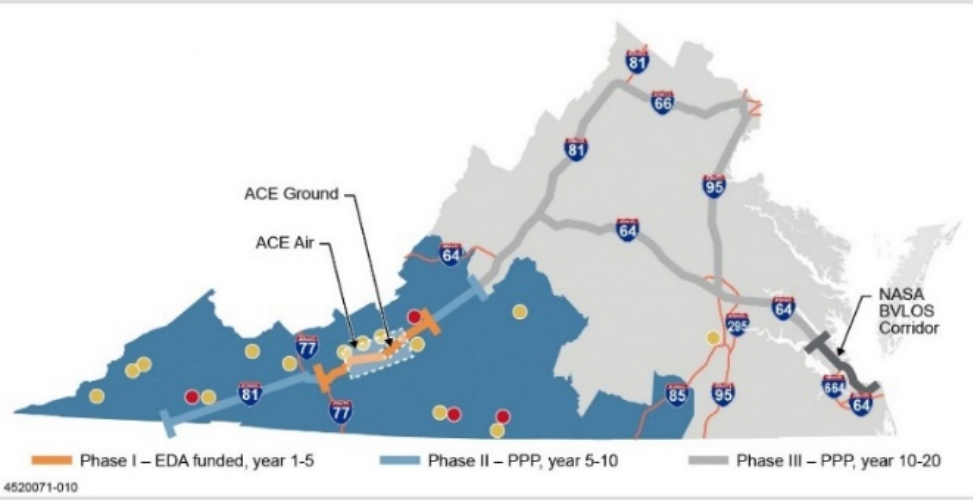



*Figure 6. Geography of ACE Coalition Projects and Partners*

Complementary partner initiatives in small business, tech transfer, and other economic development initiatives include: 1) GENEDGE, our state affiliate of the National Institute of Standards and Technology Manufacturing Extension Partnership, has a robust, state-funded program of assistance for manufacturers pivoting to post-COVID supply chain opportunities, which are abundant in our cluster; 2) the statewide Small Business Development Center network just launched a new center for its ICAP small business commercialization program in our region; 3) VEDP continues to encourage opportunities for

[7] Historically Black Colleges and Universities

private sector investment in this region nationally; 4) Virginia Tech's Link | License | Launch provides support for commercialization, venture development, and tech transfer in the region.

**Equity**

The region lacks a central organizing body to address cluster-related intergenerational poverty and structural racism. This grant will remedy this limitation by convening, confederating, and aligning distributed equity initiatives in the public, private, and educational sectors. Drawing on the Urban Sustainability Directors Network equity framework, we provide examples of how we will systematically address equity and diversity issues in the region.[8]

**Generational:** Intergenerational poverty and racism in the region have hampered economic growth. Some towns in Southwest Virginia were owned and operated by coal companies, with citizens having little say over how their lives or region were shaped. Since coal's decline, many male coal workers have left the region to find work, leaving households run by women (an **historically excluded population**) struggling. Similarly, other regional counties relied on textile and wood manufacturing plants, which uprooted communities as plants moved overseas. While Black communities exist across the region, they are concentrated in Southern Virginia, home to tobacco, and the cities of Roanoke and Lynchburg, which saw in-migration during the Great Migration. Communities of color make up 30% of these area populations. Even today these communities experience culturally ingrained segregation and far less access to the workforce and business resources of their white counterparts. The resulting poverty rate for Black residents is 25.3%, while the poverty rate for White residents is 13.7%.[9] Recognizing this disparity and encouraging representation at the table is the first step towards encouraging greater equity.

**Distributional:** The crux of the Coalition is to accelerate the technological and workforce transformation of the ACE transportation cluster in a way that sees benefits across Southwest and Southern Virginia. Coalition partners span this footprint and understand the disparities present. Historically, we have not had the leverage or impetus to directly address these disparities in collective, meaningful ways. The focus on equity that this grant provides gives this Coalition the opportunity and charge to collectively address these issues better. This Coalition will better align our services to increase accessibility for all communities, work with companies to improve production through technology and workforce development, increase market demand for company products through better alignment of the cluster supply chain, and conduct targeted engagements with communities that have not benefited from past activities like this.

**Procedural:** Already, the Coalition has identified 28 partners implementing diversity, equity, and inclusion (DEI) strategies, which we will use to develop and apply cluster-wide strategies to address inequities. *Virginia Tech* has a robust suite of programs such as the Black College Institute and Hispanic College Institute, Cultural and Community Centers, Future Faculty Diversity Program, Center for the Enhancement of Engineering Diversity, and College Access Collaborative. To reach its goal of a 35% female workforce, *Volvo Trucks* participates in many initiatives to reach this goal including the #tecHER conference, the We #ChooseToChallenge, and "Women in Leadership" positions report. With over 540,000 employees globally *UPS* has multiple initiatives to bridge the gap for underserved people and businesses. For instance,

[8] *Equity in Sustainability*, The Urban Sustainability Directors Network (USDN), 2014.

[9] Bell, S.E. (2016). *Fighting King Coal: The challenges of micromobilization in Central Appalachia*. Cambridge, MA: MIT Press; Eller, R.D. (2008). *Uneven Ground: Appalachia Since 1945*. Lexington, KY: Univ Press of Kentucky; Tickamyer et al. (2017). *Rural Poverty in the United States*. New York, NY: Columbia University Press; Wilkerson, I. (2010). *The Warmth of Other Suns: The epic story of America's Great Migration*. New York, NY: Vintage Books; U.S. Census (2022). American Community Survey 5-Year Estimates and Historic Census Migration data. https://www.census.gov/.

Proudly Unstoppable is a campaign by UPS to amplify the voices of the Black, LGBTQ+, Hispanic and Asian and Pacific Islander communities. *The Virginia Community College System* incorporated DEI in its 'Opportunity 2027' strategic plan. Objectives include encouraging more diverse faculty, adopting equity-focused teaching practices, and adjusting the academic schedule to fit the needs of all students.

All Coalition projects will also engage in inclusive activities. TITAN project partners will build a cohort of industry cluster entrepreneurs representing communities of color and women-owned businesses. These entrepreneurs will receive targeted assistance to grow their regional businesses and network with established businesses along the supply chain. Partners developing the region's workforce pipeline will ensure that a third of program participants are from historically excluded groups and coal-impacted communities. The act of aligning the education pipeline will also improve long-term economic mobility for all. TITAN program partners will also have access to the two ACE Corridors, which will subsidize services for small businesses, SWaM businesses, and those in the region who would not otherwise have access to the resources and expertise offered through these projects.

**Structural:** The Coalition has built in governance mechanisms for promoting equity. During the five-year grant, partners will work to ensure that the Cluster Coalition Board, Community and Business Engagement Council, and project governance structures reflect the geographic and demographic diversity of the region. The Regional Economic Competitiveness Officer will staff a DEI officer who will conduct ongoing evaluation of the equity components of the coalition. Finally, as described above, the Community and Business Engagement Council will identify and connect with historically excluded and coal-impacted communities in the region.

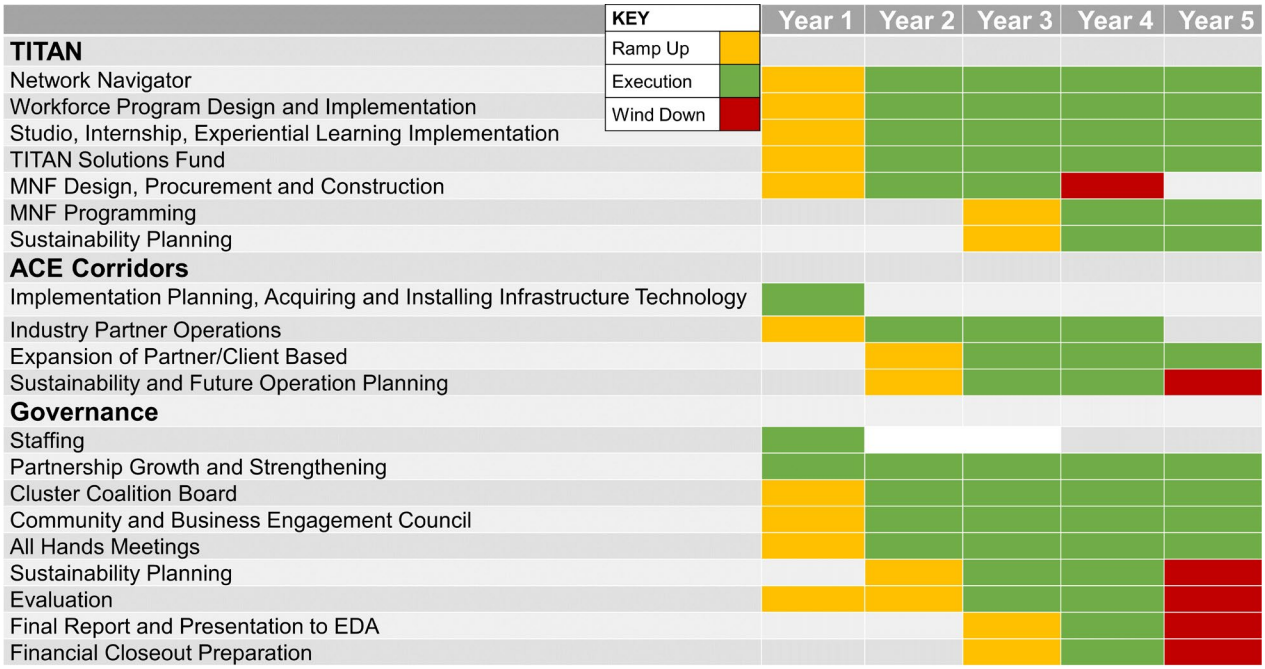
**Expected Outcomes**

To understand the outcomes and impacts of this initiative, the Coalition has developed a logic model, which it will evaluate in the coming ten years (Available upon request). During COVID, the region's cluster lost 3% of jobs. The Coalition will increase cluster growth by 3%, regaining those jobs for an overall cluster growth rate of 6.5%. By year 5, the Coalition expects to:

- Catalyze **technology-based economic development** and **environmentally sustainable development**: conduct over *12,500* ACE corridor operations with as many as *60* firms, resulting in adoption and implementation of automated and environmentally sustainable technologies; providing theses services to ACE cluster companies will support firm growth through efficiency savings of *$250 thousand* per firm annually (or *$15 million for 60 firms*).
- Encourage **workforce** development: train more than *1,350* students in participating programs; upskill *100* teachers in cluster skillsets and technology; develop more than *26* new regional cluster internships supporting as many as *135* new and retained skilled workers in the region.
- Support **economic recovery** and **advanced manufacturing**: Attract or create at least *22* new regional firms; grow *5,100* additional high-wage cluster jobs.
- Promote **equity** throughout with *one-third* of students and *one-half* of interns coming from historically excluded populations; *one-third* of the businesses served through the ACE Corridors and other technical assistance activities being from SWaM businesses or those in coal-impacted/distressed communities; *one-half* of cluster job growth being from SWaM businesses or those in coal-impacted/distressed communities; and *35%* of cluster leadership/governance being driven by underserved, coal-impacted, or SWaM entities.

This growth and activity will result in almost 13 thousand new jobs across the region and $5.1 billion in economic impact, or a 68-to-1 return on investment from EDA dollars. The impacts of this initiative will be a jump in annual GDP growth for the region from 2% to 4%, the national average; a two-percentage point increase in annual job growth for the region; lower regional poverty rates; and a smaller poverty gap between Black and White residents. Considering the breadth of geographic partnerships and operations (see Figure 6), we expect impacts to be felt by at least 60% of all counties in Southwest and Southern Virginia.

## Summary and Timetable of Phase Two work




## Changes from Phase One to Phase Two

Few changes have occurred in Phase One that have changed the overall trajectory of this coalition. If anything, the Coalition has grown, and projects have better aligned their activities to complement one another. Through new partnerships, we have expanded the service geography of the Coalition to include two additional planning district regions: Lenowisco PDC in far Southwest Virginia and Southside PDC in Southern Virginia. Partners also performed a more thorough supply chain analysis to broaden the industry cluster and identify supply chain gaps. While little has substantively changed, the Coalition has reframed the initiative to include five component proposals as opposed to the original three. These are the two ACE Corridor proposals, two TITAN proposals, inclusive of the programmatic piece and the needed construction (hub) piece, and finally the governance proposal which will guarantee project cohesiveness, equitable distribution of benefits, and sustainability past the grant period.