

THE ST. LOUIS REGIONAL TECH TRIANGLE: Building An Advanced Manufacturing Cluster & Related Industries

VISION

The St. Louis metropolitan area will drive inclusive economic growth, resilience, and job creation in historically disinvested communities, positioning the entire St. Louis metro as a globally competitive economy that addresses challenges by harnessing complementary strengths in three of its leading industry clusters. By scaling its long-standing advanced manufacturing strengths while leveraging the region's unique biosciences (medical and agriculture) and geospatial assets, the St. Louis metro will empower its economic future and accelerate inclusive regional growth.

BUILD BACK BETTER REGIONAL CHALLENGE PROPOSAL EXECUTIVE SUMMARY

Guided by St. Louis' Comprehensive Economic Development Strategy (CEDs) and the cluster analysis and strategic recommendations in the recently released *STL 2030 Jobs Plan*, the greater St. Louis Regional Tech Triangle (the "Tech Triangle") will leverage funds from the Build Back Better Regional Challenge to unlock the full potential of three distinct but related strength clusters in the region: advanced manufacturing, biosciences (medical and agriculture) and geospatial technology. The intersection of these three clusters represents tremendous potential for innovation and unrealized growth – for example, manufacturing equipment for precision agricultural planting and pesticide and fertilizer applications to reduce the use of water and other crop inputs, thus mitigating causes of climate change.

The centerpiece of the Tech Triangle proposal is the construction and operation of the Advanced Manufacturing Innovation Center St. Louis (AMICSTL) and closely aligned component projects. Functioning as a "hub and spoke" model, the Tech Triangle will allow the St. Louis region to realize the full potential of these three clusters. In the past, these sectors have operated in relative silos. Combining their strengths with a laser focus on technology, innovation, talent, and production will yield transformative results. AMICSTL will provide a central network for: (a) solving technology problems that are holding back industry growth and competitiveness; (b) identifying and deploying next-generation technologies through all three sectors; (c) accelerating the transition from idea generation to prototyping to production across all three sectors; and (d) developing a steady stream of qualified workers. Successful existing innovation centers, like the Boeing affiliated Advanced Manufacturing Research Centre in Sheffield, United Kingdom, have generated substantial outcomes. By leveraging the unique intersection of the Tech Triangle clusters and aligned activities that bridge the St. Louis region's urban, suburban, and rural economies, we anticipate that AMICSTL will become a globally recognized center for advanced manufacturing excellence. Component projects will encompass sustainable opportunities for equitable entrepreneurship, workforce training, and job growth. Greater St. Louis, Inc. (GSL), the metro area's private-sector business leadership organization and steward of the *STL 2030 Jobs Plan*, is the lead applicant on behalf of the Tech Triangle Coalition. GSL is closely collaborating with the region's public-sector St. Louis Economic Development Partnership, a co-author of the region's CEDs.

EDA technical assistance funds of \$500,000 will be leveraged by a \$250,000 cash match and at least \$250,000 in in-kind contributions from GSL. GSL drives economic growth for the 15 county, bi-state metropolitan area with a unified voice, a bold agenda, and as one metro area anchored by a vibrant core. GSL's investor-members employ more than 220,000 people in the metro area and generate global annual revenues of more than \$1.16 trillion.

Members of GSL's senior leadership team have direct experience in managing and sub-allocating federal awards to create impact as well as leveraging other sources of capital. Team members have also been

directly involved in the development of federal grant programs and awarding of funds. Phase 1 grant funds and the associated match will support personnel, fringe, and contractor costs related to coordinating resources toward regional competitiveness; executing the region's advanced manufacturing cluster plans; and sharpening projects that advance the cluster. To facilitate coordination and ensure resources benefit regional competitiveness, GSL will designate a Regional Economic Competitiveness Officer to serve as the central coordinator (see Budget Narrative). This is consistent with GSL's initiative leadership structure.

BACKGROUND, PROPOSAL DETAILS, EQUITY, AND ANTICIPATED OUTCOMES

The Tech Triangle proposal spans the metropolitan statistical area and GSL's established service area to include St. Louis City, Franklin, Jefferson, Lincoln, St. Charles, St. Louis, and Warren counties in Missouri, and Bond, Calhoun, Clinton, Jersey, Macoupin, Madison, Monroe, and St. Clair Counties in Illinois.

The data on the greater St. Louis metropolitan area paint a sobering picture of an older industrial economy where long-term distress has been exacerbated by the COVID-19 pandemic:

- In 1970, St. Louis was the 10th largest Metropolitan Statistical Area (MSA) in the nation. Today, it is the 21st.
- Between 2010-2020, the St. Louis MSA population grew by 15,369, or 0.55%. During the same period, the U.S. grew population by 6.5% (13 times faster).
- The two central counties in the metro area lost population over the decade: St. Louis County shrank by 4,826 people (0.48%); the City of St. Louis by 21,722 (6.8%).
- As a result of the COVID-19 pandemic, from April 2019 to April 2020, the number of employed persons in the St. Louis region fell by over 166,000, and the labor force decreased by over 52,000. For reference, this decline surpassed 23 years of employment growth from 1996-2019 (154,100).
- Over the last 24 years, the St. Louis MSA employment has grown at a compound annual growth rate of only 0.24%, approximately one third of the U.S. growth rate of 0.72%.
- Moody's Analytics forecasts that the St. Louis MSA will not return to 2019 employment levels by 2026, while the U.S. is forecasted to do so by 2022. Their 2020-2025 employment forecast ranks the St. Louis MSA 397th out of all 410 U.S. MSAs.
- Long a hub for major coal companies, the MSA has seen bankruptcies of large coal companies in recent years, including Peabody Energy, Arch Coal, Patriot Coal, and Foresight Energy.

After decades of economic underperformance, population stagnation and decline, and racial division, the 15 counties comprising the bi-state St. Louis metropolitan area are working collaboratively and with a steadfast commitment to inclusive economic growth, racial equity, and increasing the number of quality jobs. This commitment and work are particularly important for Black and Brown communities whose populations have historically not reaped the full benefits of local economic gains.

To that end, in May 2021, the *STL 2030 Jobs Plan*, authored by acclaimed economic development expert Bruce Katz of New Localism Associates, was published. It provides a 10-year roadmap for boosting economic growth, creating living-wage jobs, and reducing racial disparities in employment and wealth-generation. The *STL 2030 Jobs Plan* identifies how the St. Louis metro can capitalize on its strengths to overcome historical economic underperformance that was exacerbated by the global COVID-19 pandemic.

Specifically, the *STL 2030 Jobs Plan* recommends five actionable strategies to drive St. Louis regional growth: 1) Steward an Inclusive Economy; 2) Restore the Core of St. Louis as the Jobs and Cultural

Center of the Metropolis; 3) Build a World-Class Ecosystem for Small Businesses and Entrepreneurs; 4) Become a Talent Engine and Magnet; and 5) Make St. Louis a Hub for Next-Generation Industries and Technologies. This regional Tech Triangle proposal leverages the *STL 2030 Jobs Plan's* growth clusters and recommended strategies to catalyze equitable growth in the region.

In developing the Tech Triangle proposal, we adopt a “hub-and-spoke” approach.

The Hub

As the hub of the proposed cluster, AMICSTL will be a newly built innovation center located in disinvested North St. Louis City. AMICSTL will be a local asset with national impact – driving leading edge advanced manufacturing through 1) research and development; 2) prototyping and production scaling; and 3) workforce training. Planning for AMICSTL began through conversations held by a Regional Advanced Manufacturing Partnership (RAMP) coalition, initially funded by the U.S. Department of Defense Office of Economic Adjustment (today, the Office of Local Defense Community Cooperation) in 2014.

The Spokes

Workforce Growth and Development: A range of workforce growth and development activities will be embedded in AMICSTL and with various coalition members and partners throughout the St. Louis metro. They will work collaboratively to drive equitable workforce training and employment opportunities. Potential first-year projects include growing youth and adult apprenticeships that build skills and competencies toward geospatial and advanced manufacturing careers; training and wrap-around services for women, particularly women of color, to enable access to higher-wage jobs in the growth clusters; expansion of facilities throughout urban, suburban, and rural communities to increase advanced manufacturing training; and expansion of biosciences and geospatial training to fill high-need occupations. Preliminary metrics to measure progress include demographics of students, program completion rates, apprenticeships that lead to full-time employment, and the number of women participating and advancing in career opportunities.

Innovation and Entrepreneurship: The Tech Triangle will expand the capacity to turn ideas generated into new entrepreneurial ventures and new business lines for existing companies. Potential projects to accomplish this spoke include support to build manufacturing, logistics, and supply chain capacity at the intersections of biosciences, geospatial, and advanced manufacturing. In addition, coalition members and partners would promote and support minority and female ownership of companies and develop additional linkages between urban and rural communities to encourage shared economic vitality; testing and development in advanced manufacturing processes and products for geospatial applications; and the expansion of entrepreneurial programs at St. Louis's HBCU and other educational institutions. Preliminary metrics to measure progress include number of new start-ups, demographics of new start-ups, and successful development of new processes.

Community Revitalization: AMICSTL itself will be in a historically disinvested neighborhood with a high concentration of Black residents. Located in an Opportunity Zone in the St. Louis Promise Zone of a persistent poverty county, AMICSTL and aligned components will serve as catalysts for advancing economic opportunity in the adjacent neighborhoods. AMICSTL and other strategic investments will lead to first-year opportunities for business corridor revitalization and small business empowerment. The neighborhood will also be well-positioned to shape the cluster as it grows and to participate in overall cluster development. St. Louis Development Corporation will implement best practices for neighborhood planning and development to convene, engage, and elevate the key priorities for the residents and businesses within and adjacent to the AMICSTL site to ensure existing stakeholders are positioned to

realize economic benefit from the project. Preliminary metrics include new jobs and businesses in the disinvested neighborhood and population growth in the neighborhood.

Overall Cluster Development and Growth: AMICSTL will accelerate the development of the Tech Triangle of advanced manufacturing, biosciences, and geospatial. First-year efforts will include enhanced linkages across the clusters, engagement of industry leadership, direct involvement of coalition members and partners, branding cultivation, employer and employee engagement, and continued review and refinement of cluster capabilities. The region's existing BioSTL and GeoFutures coalitions are models of this work. Preliminary metrics to measure include level of civic and industry involvement and successful growth of each leg of the Tech Triangle.

REGIONAL ASSETS, INDUSTRY LEADERSHIP, AND SUSTAINABILITY

The St. Louis metro is located within 1,500 miles of 90 percent of the North American continental population and gross domestic product. It is at the confluence of three major rivers – the Mississippi, the Missouri, and the Illinois – and is the northernmost port on the Mississippi to remain generally ice-free year-round. Such advantages make St. Louis the nation's third-largest inland port by trip ton-miles of shipments and the tenth-largest inland port by tons of cargo traded. The metro is served by four toll-free interstate highways, putting it at the nexus of the north-south and east-west interstate systems. It is connected by Amtrak and six Class 1 railroads, making rail service to the rest of the country extraordinarily fast and convenient. And it is served by an international airport and a host of regional airports. Advanced manufacturing businesses have access to reliable and cost-effective energy in the region (natural gas and electric), virtually unlimited water capacity, and exceptional telecommunications resources.

Within 150 miles of downtown St. Louis, 45 colleges and universities offer degrees in engineering or related technologies. Higher education institutions on both sides of the river have long supplied area manufacturers with skilled production, management, engineering, and leadership talent. Over time an intricate and sustainable infrastructure evolved to support the region's advanced manufacturing enterprises, many of which are coalition members and partners involved in this effort. For example, Ranken Technical College, located next to the proposed AMICSTL site, has contributed to a quality technical workforce in the St. Louis region for over 100 years and hosts over 1 million square feet of advanced technology laboratories as well as facilities through the region and state. St. Louis Community College's Florissant Valley campus has a 2,000-square-foot Center for Workforce Innovation dedicated to aerospace and manufacturing training to support established defense industry partner Boeing (see Regional Assets Appendix for further examples).

The above assets and more will contribute to the growth, resilience, and sustainability of the advanced manufacturing cluster and the Tech Triangle as a whole. As one prominent example, the National Geospatial Agency recognized the long-term benefits of the St. Louis metro and is investing \$2 billion for its Next NGA West (N2W) headquarters in economically distressed North St. Louis – just eight minutes from the AMICSTL site. N2W serves as a flagship anchor institution for the region's geospatial growth cluster.

Leveraging the existing commitment embodied in the *STL 2030 Jobs Plan* – and the established consortia of the region's bioscience and geospatial clusters – the St. Louis metro has assembled a diverse Tech Triangle Coalition and a broad range of partners to advance the regional effort through this proposal and beyond. Nearly 30 Coalition members cover the bi-state geography and include private and public economic development entities (GSL, SLEDP, St. Louis Development Corporation, Economic Development Council of St. Charles County, St. Clair County); labor (St. Louis Building and Construction Trades Council, Missouri AFL-CIO); cluster intermediaries (BioSTL); research parks, industrial parks, and venture

development organizations (AMICSTL, Cortex Innovation Community, T-REX, Entrepreneur Startup Business Development Corp, St. Louis Makes, Danforth Plant Science Center, 39N Agtech Innovation District, MidAmerica STL Aerospace Park); K-12 schools (St. Louis Public Schools), public and private universities, community colleges, and technical schools, including the region's HBCU (Harris-Stowe State University, Ranken Technical College, St. Louis Community College, Southwestern Illinois College, East Central College, Jefferson College, Lewis & Clark Community College, St. Charles Community College); workforce training organizations (Gateway Global American Youth & Business Alliance Academies, Inc., Rung for Women); Black-led entrepreneur support organizations (St. Louis Small Business Empowerment Center, WEPOWER); and more. Additionally, St. Louis benefits from the unique concentration of six Workforce Investment Boards across the bi-state MSA – including locations in historically disinvested North St. Louis City and North St. Louis County – serving tens of thousands of residents annually, that can be leveraged to ensure a diverse pipeline of workers for job training and placement within key industries.

The leadership of the business community in funding the development of the *STL 2030 Jobs Plan* and the current success of the biosciences and geospatial growth clusters demonstrate that the St. Louis region's private and philanthropic sectors serve as backbones for accessing matching funds. Additionally, local, public-sector investments such as the two recently passed initiatives to increase funding to expand access to community college education and training demonstrate the citizens of the region support the long-term success of the region's residents and economic growth clusters, and significant additional investments are planned to extend light rail service via MetroLink to key new manufacturing and transit hubs.

TIMELINE AND CHALLENGES

Planning for AMICSTL began in 2015 with the St. Louis Economic Development Partnership engaging AECOM for a defense adjustment strategy. Architectural and engineering plans are already underway. AMICSTL has begun soliciting private funding and applying for other grant opportunities. Phase 1 planning funds will be used to do the final work needed to bring the vision to fruition with construction likely able to begin within six months of a construction funding agreement. Construction is anticipated to take 24 to 30 months, well within the Phase 2 funding cycle. Specific timelines of aligned components will continue to be refined through the planning phase, but all potential projects are well-positioned to be launched and active with the receipt of Phase 2 funding.

The commitment from the broad Coalition of economic development entities is evidenced by their past engagement with GSL, SLEDP, and other regional conveners. Nevertheless, growing a regional cluster can present challenges in stakeholder vision and alignment. Reconciling differences among individual stakeholders with distinct and valuable missions is always difficult.

However, the St. Louis region has strong leadership through GSL and SLEDP and a history of facilitating coalitions to help grow the region's economy around biosciences and geospatial technology. GSL's very existence is the result of legacy organizations' leaders determining our metro would best be served if they combined their efforts for the region's collective benefit. The Tech Triangle Coalition members understand that our combined work can be greater than the sum of its parts, and targeted investments in cluster development and intermediaries will allow us to mitigate alignment challenges as they arise.

We welcome the opportunity to compete for these competitive Build Back Better Regional Challenge grant dollars. St. Louis stands ready to leverage these funds to build our advanced, robust Tech Triangle and a more prosperous future for all.