

GREATER PITTSBURGH-WV
METALS MANUFACTURING COMMUNITY

PROGRESS REPORT & RESOURCE ROADMAP

July 30, 2018



LEVERAGING RESOURCES FOR REGIONAL MANUFACTURING

On July 8th, 2015, the U.S. Department of Commerce (DOC) Economic Development Agency (EDA) designated the 20-county region around greater Pittsburgh and northern West Virginia as a “Manufacturing Community” under the “Investing in Manufacturing Communities Partnership” (IMCP) program. IMCP is a multi-agency program designed to leverage economic development funds and accelerate the resurgence of manufacturing by helping U.S. localities make coordinated, long-term investments in their public goods in partnership with universities and industry.

The “Greater Pittsburgh Metals Manufacturing Community” (GPMMC) is a partnership of government, university, industry, workforce and economic development organizations in southwest Pennsylvania and northwest West Virginia, who are working to build upon the region’s historic strengths in metals and materials, strong supplier networks, world class research universities, abundant energy and water, and available brownfields sites, to drive economic and community revitalization in the region and beyond.

GPMMC has achieved three years of substantial progress and significant successes under the IMCP designation. Led by Catalyst Connection, a Manufacturing Extension Partnership (MEP) Center based in Pittsburgh, GPMMC has developed a robust network of partners and resources that capitalizes on the confluence of advances in new materials, digital technology and energy to create a ripple effect of economic development and growth for the entire region. The coalition’s coordinated efforts have leveraged federal, state, philanthropic, and private sector resources to launch new initiatives and scale successes that enhance the metals-materials manufacturing ecosystem and produce regional and national impacts. There is much critical work ahead and there are more accomplishments to be realized, as GPMMC works to sustain and grow the programs and efforts that we have implemented with the support of federal IMCP resources.

PURPOSE OF DOCUMENT

This document will provide a progress report on the GPMMC initiative, highlighting successes borne out of the enhanced regional collaboration and identifying key steps for continued progress. The assessment of progress will call attention to areas of need and opportunities for growth within the six IMCP key pillars of a strong manufacturing ecosystem identified by EDA:

Finally this document will also provide an outline of GPMMC’s coordinated approach to pursuing and leveraging additional resources into the region from IMCP federal agencies and other federal, state, regional, local, philanthropic and private sector funding sources.



CATALYST CONNECTION
Your Strategic Partner for Manufacturing Growth

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LEAD AGENCY:

Catalyst Connection is a US DOC Manufacturing Extension Partnership (MEP) center, a private, not-for-profit economic development organization working with state and local leaders and manufacturing entities across 13 counties of the Greater Pittsburgh region. Catalyst is also a Pennsylvania Industrial Resource Center, and a member of the Pennsylvania Partnership for Economic Performance (PREP), which is the Commonwealth of Pennsylvania's economic development program for regional business outreach and assistance. See www.CatalystConnection.org.

STRENGTH OF THE GPMCC NETWORK UNDER IMCP DESIGNATION

GPMCC’s success in attracting new businesses, fostering growth in innovation, and developing a skilled workforce depends upon an active partnership between key stakeholders across sectors. With support from an initial U.S. EDA Planning grant to implement the IMCP initiative, Catalyst Connection has served as the lead organization for sustaining a strong GPMCC network through facilitating partnership coordination, hosting and attending key events, and maintaining communications infrastructure for the core partners and the broader partnership network.

PROGRESS	DELIVERABLES
<p>1) Robust network of active partners sharing information, resources & best practices.</p> <p>Catalyst Connection, Johnstown Area Regional Industries (JARI), the University of Pittsburgh (Pitt), and West Virginia University (WVU) coordinate with geographical cohorts to share information and resources using well-established contact lists. Open lines of communication facilitate innovative partnership in developing projects and ensuring partners are aware of training, technical assistance, and funding opportunities, as well as gatherings, conferences, and events.</p>	<ul style="list-style-type: none"> • Quarterly partner meetings • Frequent email communications • Weekly IMCP Communities calls • Attendance at community meetings
<p>2) Open communication with federal partners to facilitate coordination, secure resources, and track progress.</p> <p>Catalyst Connection serves as a liaison between the partners and IMCP agency officials in Pennsylvania and DC, bringing opportunities for federal funding, technical assistance, and guidance to coalition members and bringing progress reports, questions, and new ideas to IMCP partners.</p>	<ul style="list-style-type: none"> • Regular calls with federal point of contact • Quarterly reports on GPMCC activities and progress • Visits to DC, including participation in EDA-led economic summits • Hosting federal agency visits to region
<p>3) Abundance of data and analysis to identify gaps & needs and to inform actions.</p> <p>GPMCC partners leverage their expertise to undertake data collection and analysis to support continuing assessment of sector needs, progress, and opportunities. Catalyst Connection has conducted supply chain research and generated an asset map of southwestern Pennsylvania. JARI has conducted a needs assessment to inform efforts to provide workforce training and recruitment support. Pitt has established processes to identify and conduct outreach around new business and start-up activity. WVU, together with Catalyst Connection and other MEP partners in WV, PA and OH, are using Appalachian Regional Commission funding to map supply chains in the emerging shale-manufacturing sectors.</p>	<ul style="list-style-type: none"> • Regional Asset Map • Employer Workforce Needs Assessment (in progress) • Supply chain mapping • Analysis of outreach and capture of startup activity
<p>4) Organized system for obtaining expertise, support, and commitment for projects seeking to secure/leverage resources.</p> <p>Catalyst Connection works with strategic consultants to provide project development consulting and grant-writing assistance for federal funding opportunities that align with GPMCC goals. GPMCC partners have produced well-supported and well-organized efforts to secure funding from a variety of IMCP agencies and other funders. GPMCC partners act swiftly to engage each other to fulfill project roles, provide letters of support and match commitments, and support project implementation.</p>	<ul style="list-style-type: none"> • Monthly newsletter with relevant grant opportunities • Successful GPMCC partner applications for \$36 million in funding from EDA, ARC, DOL, EPA, DOT, and others.

PROGRESS: KEY HIGHLIGHTS OF CURRENT INVESTMENT

The IMCP designation has leveraged economic development funds to accelerate the resurgence of manufacturing in Greater Pittsburgh by supporting the region's long-term economic development strategies and short-term approaches to growth. GPMCC partners have received over \$36 million in grants from IMCP agencies and other key funders for relevant projects and partnerships to date (see Appendix A), with several additional applications currently pending. IMCP grants have been targeted toward projects that support industry-led workforce development, innovation in digital technologies, business assistance, entrepreneurial development, supply chain enhancements, site development, and other activities that reinforce and expand the GPMCC materials and metals manufacturing ecosystem. The following selected project launched under the IMCP designation are strengthening the workforce, fostering research and innovation, and advancing the global competitiveness of the greater Pittsburgh-WV region:



The **Making Your Future** (makingyourfuture.org/) campaign was developed by GPMCC to help put job seekers' creativity and technical skills to use in a career working for the thousands of eager metals and other manufacturing sector employers in the region. The initiative boosts metals manufacturing businesses and jobs in a way that strengthens the local economy and support continued making of quality products that are needed by people across the world. The website provides resources for job seekers include a self-assessment for manufacturing career interests, a guide to career training resources, links to apprenticeship opportunities, a "Maker Space" locator, and job search resources for job seekers and makers. The website's resources for employers include guidance on building a workforce, hosting apprenticeships, finding employees, developing leaders, and engaging the community.



Building on the multi-year success of the ShaleNET initiative, the **Tri-State Energy & Advanced Manufacturing (TEAM) Consortium** consists of industry, higher education, economic development entities, businesses, non-profits, and workforce development boards from Western Pennsylvania, Eastern Ohio and Northern West Virginia. With philanthropic funding support of the Claude Worthington Benedum Foundation and the Chevron company, along with new resources from the Appalachian Regional Commission POWER initiative, TEAM Consortium is working to develop new systems focused on future employer needs in the energy, petrochemicals and advanced manufacturing industries by aligning curricula, engaging employers, sharing training tools and vendor lists, and creating seamless pathways across state lines.



The **Appalachia Partnership Initiative's (API) investments in education, workforce development, and the community** have supported the acquisition of STEM (Science, Technology, Engineering, & Math) skills among K-12 and adults students, engaged industry in curriculum development, and enlarged STEM-Collaborative networks across 27 counties in Pennsylvania, Ohio and West Virginia. Since the IMCP designation, API has reached more than 70,000 people with its programs. (See [2012-2014 API progress report](#)).



In January of 2017, the Department of Defense awarded the public-private Manufacturing USA institute to American Robotics, a nonprofit venture led by Carnegie Mellon, with more than 220 partners in industry, academia, government and the nonprofit sector nationwide. The **Advanced Robotics for Manufacturing Institute** (arminstitute.org/) received \$80 million from the DOD, and an additional \$173 million from the partner organizations. The high-level award puts Pittsburgh and CMU at the center of a new wave of manufacturing, leveraging artificial intelligence, autonomy, 3-D printing and other emerging technologies to make industrial robotics more affordable for businesses of all sizes, adaptable for many uses, and able to achieve more. In 2018, ARM will locate in a new headquarters on a reclaimed brownfield and former steel mill that will be an advanced green community.



The City of Weirton, WV and its partner the Business Development Corporation of the Eastern Panhandle (BDC) are underway with an ambitious effort to **re-purpose and redevelop 1,500 acres of closed steel plant property** in the heart of the community. Weirton/BDC have leveraged nearly \$2 million in U.S. EDA grant funding and \$800,000 in U.S. EPA Brownfield cleanup funding to create a master plan and implementation strategy for redevelopment of these vacant industrial properties, and to clean up brownfields to prepare for new development in the metals and advanced manufacturing sectors. Already, Weirton/BDC have landed an Italian manufacturing company that will invest \$9 million and create 150 jobs to produce advanced technologies for the shale gas sector; and also another Canadian-based energy and manufacturing company which has located a new manufacturing operation and up to 130 jobs in a re-purposed property at the old steel plant. Weirton will also leverage these IMCP agency resources the creation of a new Conference Center & Business Incubator that will attract business and investment to the region as it continues to diversify its economy.



JARI, the City of Johnstown, leaders from Carnegie-Mellon University and other partners are transforming a vacant building in downtown Johnstown, PA into **Creator Square Johnstown**, a maker-space that will attract talented entrepreneurs in design, manufacturing, the arts and other creative fields to Johnstown, connect them with community and manufacturing sectors, educate the community, retain young talent, and boost prospects for economic renewal in a struggling city. The Creator Square project is being funded with sources including the Economic Development Administration and the U.S. Department of Defense's Office Economic Adjustment Assistance.



The **PA MAKES** (Manufacturing Assistance for Keystone Entrepreneurial Success) project will replicate and extend Catalyst Connection's successful, highly subscribed Manufacturing Mini-grant program funded by an ARC POWER grant. PA MAKES will be a Pennsylvania state-wide program to provide targeted and direct assistance to small and medium-sized manufacturing companies to help diversify markets, leverage new opportunities in emerging sectors and develop robust industry clusters. Catalyst Connection and partners have secured an additional ARC POWER grant, and are seeking an additional U.S. EDA Economic Adjustment Assistance grant, to expand the mini-grant program across all seven participating MEPS / Pennsylvania Industrial Resource Centers (IRCs) in Pennsylvania, working together with the statewide "Pennsylvania IRC Network" (IRCEN) supporting manufacturing innovation across the Commonwealth.

Support from Philanthropic Organizations: The GPMMC region has significant support from local foundations Claude Worthington Benedum, RK Mellon and others.

The Claude Worthington Benedum Foundation has a mission to encourage human development in West Virginia and Southwestern Pennsylvania through strategically placed charitable resources. Since its establishment in 1944, the Foundation has authorized grants totaling over \$410,000,000 in West Virginia and Pittsburgh, the native and adopted homes of Sarah and Michael Benedum. Currently the Benedum Foundation supports educations and economic development, including investments with the GPMMC partners and supporting GPMMC priorities, including almost \$2 million in 2017 for educational initiatives that directly support building an advanced manufacturing talent pipeline.

With assets over \$2.6 billion at December 31, 2017, the **Richard King Mellon Foundation** has built on the vision of its founders. The Foundation’s current giving priorities primarily serve southwestern Pennsylvania with a program focus on Regional Economic Development and Conservation, along with Education and Human Services and Nonprofit Capacity Building. In specific support of GPMMC priorities, a foundation grant of \$20,000,000 over three years is supporting CMU’s launch of the Manufacturing Futures Initiative (MFI), a manufacturing hub across industries. MFI, together with the Advanced Robotics Manufacturing (ARM) Institute, which seeks to help industry adopt new technologies that will lead to the creation of 510,000 manufacturing and related services jobs across the United States by 2025, will serve as the underpinning for all CMU manufacturing research projects, building the initiative into the country’s leading manufacturing hub and driving job growth throughout Pittsburgh. The grant also is supporting efforts to locate and outfit the ARM Institute’s facilities at Hazelwood Green, where it will serve as the anchor tenant in the RIDC Mill Building.

During the period of 2015 – 2018, the greater Pittsburgh metro area has realized a 2.3% growth in manufacturing jobs, going from 86,100 manufacturing jobs in December, 2015 to 88,100 as of June 2018. This growth can be attributed to national economic growth, as well as the many investments in manufacturing related initiatives, including those mentioned above. Federal funding, state funding and local private investments have worked together to support key initiatives in workforce development, supply chain, regional infrastructure and many other programs. With continued partnership, the GPMMC is well positioned for continued prosperity due it advanced manufacturing and materials cluster.

Building on this IMCP progress, the GPMMC coalition is launching expanded initiatives for development of this manufacturing sector – but **further resources must be secured and leveraged** to make this happen:

- Gaming the Future for Manufacturing Workers:*** Catalyst Connection is launching a free, downloadable virtual simulation technology to train teachers and attract students for the manufacturing sector, and to help launch future advanced manufacturing workers on a pathway to skilled, family-sustaining jobs. This “Gaming the Future” project will engage 50+ schools each year over two years, collaborate with manufacturing enterprises throughout Pennsylvania, and provide 1,000+ students with a compelling exposure to opportunities in high-skills, advanced manufacturing. **Catalyst is seeking a pending ARC POWER grant to support this expansion.**
- Center for Metal Arts / Rosedale Industrial Park:*** Founded in 1852, the Cambria Iron Works is one of the birthplaces of the region’s and nation’s metal industry, until it closed for good in 1992. At the heart of the complex, the Cambria Blacksmith Shop is a beautiful building on the National Register of Historic Places, which houses magnificent metalworking equipment including the largest industrial hammer in America, owned by the Smithsonian Institution. In 2018, Johnstown was excited to announce that the Cambria Blacksmith shop would be reopened as the headquarters of the “**Center for Metal Arts**”, an educational institution that teaches and trains blacksmiths and metalsmiths in skills needed for craftsmanship, making, and advanced artistic creations. Launched with philanthropic support from the Community Foundation for the Alleghenies, the Center for Metal Arts expects to provide in-depth training to 275 students in 2018 alone. However, the Johnstown Redevelopment Authority and JARI still need as much as \$4.5 million in resources to realize the vision for expanded economic redevelopment at three buildings in the Cambria Iron Works complex and additional development at the adjacent Rosedale Industrial Park, which is a designated Keystone Opportunity Zone. Johnstown intends to seek resources including **U.S. EDA Public Works / Economic Adjustment Assistance grant funding, ARC POWER resources, Pennsylvania Department of Transportation resources, Pennsylvania “Business in Our Sites” redevelopment funding, and state and federal historic tax credits** for building restoration.

REGIONAL
OUTLOOK:
SOUTHWESTERN PA

93,365

people working in one of

2,829

manufacturing companies,
making an average salary of

\$59,683

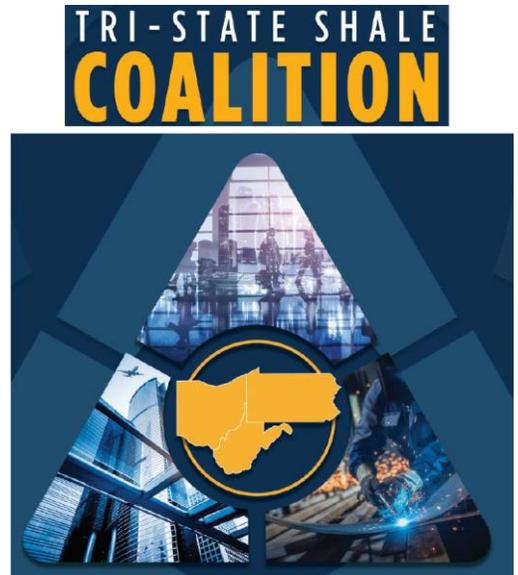
making products delivered
around the world. There are

30,000

new manufacturing workers
needed to fill current and
future vacancies.



Tri-State Shale Coalition Regional Outreach Plan: In Fall 2015, the Governors and public/private leaders of Ohio, Pennsylvania and West Virginia signed a robust three-year cooperation agreement to promote economic diversification and job creation in downstream manufacturing sectors built upon the shale gas industry in the Appalachian basin. The Tri-State Shale Initiative seeks to capture the supply chain opportunities for manufacturing, technology and product development, and job creation that could emerge from the availability of a robust shale gas sector. This shale-manufacturing sector must be closely integrated with the region’s metals and advanced materials supply chain, which is the focus of the GPMMC IMCP effort. The Tri-State Shale Coalition, which involves many of the key partners of GPMMC, seeks to move forward now on a regional initiative to engage the U.S. domestic and global markets for investment in the region’s manufacturing sectors, by creating a compelling regional message about the competitive advantages and assets of the region. This “POWER Up Appalachia! Initiative will conduct a regional Tri-State Shale Summit, create and deploy a regional branding and marketing campaign for manufacturing investment, produce collateral marketing activities, and provide resources for better regional engagement in national and global markets. The non-profit organization **Vision Shared WV is working on behalf of the Tri-State Shale Coalition to seek U.S. EDA, state, and other resources to support this effort.**



- **Hazelwood Green:** On the site of a former steel plant on a Pittsburgh riverfront, the City, State, and the philanthropic community have launched an ambitious project to redevelop the “Almono” site into a new, 7+-million square foot technology innovation complex, built using advanced sustainability approaches and committed to economic opportunity and job



opportunities for local residents. This “Hazelwood Green” development will be anchored by the Advanced Robotics Manufacturing Institute, and house Catalyst Connections’ new headquarters. See www.HazelwoodGreen.com. The Hazelwood Green project will need **major public and private sector investment including infrastructure upgrades, clean energy technologies, green infrastructure and other resources** to realize the vision.

- **Additive Manufacturing Supply Chains for the US Army:** Catalyst Connection, in partnership with America Makes, driven by NCDMM, proposes to support the interests and needs of the Fiscal Year 2018 Defense Appropriations Bill, Army Manufacturing Technology program to support Additive Manufacturing Technology Insertion. The defense

appropriations is included in the Army, RDTE, End Item Industrial Preparedness Activities and calls for 1) Additive Manufacturing Technology Insertion: \$10M and 2) Additive Manufacturing Supply Chain: \$10M. Catalyst Connection and America Makes will work with the US Army to focus the Industrial Preparedness activities in the GPMMC community.

- ***Resources for Further GPMMC Expansion:*** The Economic Development Administration helped the GPMMC partnership launch and achieve major milestones thus far. Catalyst Connection and its partners seek to continue and expand these manufacturing collaboration efforts, and plans to seek additional **U.S. EDA, philanthropic, state and other resources** to continue this effort.

PROGRESS REPORT: SIX IMCP PILLARS

This section will provide a snapshot of GMPCC's achievements within each of the six IMCP pillars for building the regional manufacturing cluster, as well remaining areas of need and opportunities for growth.

PILLAR 1: WORKFORCE AND TRAINING

Coordination of workforce development entities, industry employers, educational institutions, and training providers under the IMCP designation has led to significant progress across four key goals: (1) facilitating industry-led development of common curriculum for middle skilled occupations as the foundation for new training programs; (2) promoting awareness, as GPMCC has launched several programs to recruit and train new workers in the metals and materials manufacturing fields, which are high-wage occupations that with training and certification requirements. These training fields are supporting talent pools including middle schools, high schools, community colleges, incumbent workers, dislocated workers, and adults seeking opportunities; (3) ensure that underrepresented and disadvantaged populations and veterans have strong connections to employment opportunities; (4) expand apprenticeships, internships, and community college offering for high-skilled, high-wage metal and materials jobs.

SUCCESSSES

GMPCC has achieved several notable successes and launched new programs to support workforce development and job training in the metals and materials manufacturing sectors under the IMCP designation.

Web-based: The **Making your Future** website (www.MakingYourFuture.org) and the **Explore the New Manufacturing** website (<http://explorenewmfg.org/>) are generating excitement about career opportunities in manufacturing, information technology, and other STEM fields. These websites bring education and industry together by providing resources for students and manufacturers.

The **Explore the New Manufacturing** initiative also manages several initiatives to support and develop a pipeline of workers. These include the Middle School Video Contest, Teacher Professional Development, and the Manufacturing Innovation Challenge. The annual Middle School Video Contest is focused on *What's So Cool About Manufacturing* where students and companies partner together to highlight manufacturing operations and related careers, culminating in an annual event that attracts close to 800 people from the community. The Explore initiatives are made possible with generous support from the API, specifically API partners, the Benedum Foundation and Chevron Appalachia, LLC.

Similarly, the **BOTSIQ** program is a manufacturing workforce development program disguised as a high school robotics competition. The Smart Sport is designed to provide high school students with an exciting, hands-on team experience while they learn about the pathways to a rewarding career in manufacturing, whereby thousands of SWPA students have designed, built and competed while learning about manufacturing careers.

Place-based: In May 2017, the **University of Pittsburgh** relocated its **Manufacturing Assistance Center** to a 150,000-sq-ft building where it will offer machining certification programs and other valuable career training to interested candidates in distressed surrounding neighborhoods.

The **Appalachian Partnership Initiative's** investments in education and workforce development include “Fab Labs,” which provide a place for learning, innovation, and technical prototyping to stimulate entrepreneurship. The Fab Labs at the Carnegie Science Center and Intermediate Unit 1 in Grindstone, Fayette County provide 3-D printing, laser cutting and other advanced manufacturing tools and technologies to students. API has also created mobile fab labs that serve Pittsburgh neighborhoods as well as rural communities.



In September 2017, Pennsylvania Governor Tom Wolf announced a \$10 million grant to help pay for the construction of a workforce development center at the **Community College of Allegheny County's (CCAC) North Side campus**. The new facility will fill the need for an urban workforce development center that is subway accessible for students in Allegheny County.

Apprenticeships: Apprenticeships offer manufacturing incumbent workers the opportunity to “earn and learn”. Catalyst Connection has become a Group Sponsor of the Industrial Manufacturing Technician (IMT) apprenticeship program, which is an entry level program that can build a pipeline of workers for advanced skills in machining, welding and industrial maintenance.

Incumbent Worker Training: WEDnetPA (Workforce & Economic Development Network of Pennsylvania) supports Pennsylvania companies by investing in the training needed to upgrade the skills, knowledge and effectiveness of their current employees. Catalyst Connection and CCAC have partnered to support well over 50 companies upgrade their workers with new skills in lean manufacturing, problem solving, leadership and technology.

Pennsylvania Manufacturing Fellows Initiative (PMFI): PMFI is part of the **Manufacturing PA** program, which includes the PA Manufacturing Innovation Program, and is funded by the Pennsylvania Department of Community & Economic Development, is a collaboration between Carnegie Mellon University, Drexel University, Lehigh University, Pennsylvania State University, Temple University, University of Pennsylvania, and University of Pittsburgh, the Industrial Resource Centers (IRCs), and the Department of Community and Economic Development. The program leverages the internationally acclaimed science and engineering talent and discovery capacity of Pennsylvania’s institutions of higher education to ensure that Pennsylvania remains a national and international leader in manufacturing and achieves the full economic potential for high-paying manufacturing jobs. A main component of the PA Manufacturing Innovation Program is the Manufacturing Fellows Initiative which will support designated undergraduate and graduate student fellows at PA universities to work with PA manufacturers. University faculty/students will address projects identified by industry to help advance new products or process innovations

GAPS & OPPORTUNITIES

GMPCC seeks to address the need to increase participation and engagement of underrepresented constituents in workforce development and training programs. In addition, GMPCC sees a need and opportunity to scale its successful initiatives to ensure that a larger number of students are exposed to advanced manufacturing career awareness. Preliminary results from a survey of manufacturers by Catalyst Connection indicates that there are hundreds of current job openings in the region for entry level and technical production positions, and that a majority of manufacturers are responding that finding workers is a critical to the overall success of their business. In particular, many companies are facing significant challenges due to the worker shortage, including loss of customers and decreased profitability.

- Scale student-worker pipeline, including launching pre-apprenticeship programs in area high schools
- Outreach and engagement to minority, veteran, and dislocated workers including impacted coal-sector workers

Key Funding Opportunities:

- ARC POWER “Gaming the Future for Manufacturing Workers” initiative for a Catalyst Connection project to support the development and deployment of mobile device gaming applications to support entry into manufacturing jobs.
- Department of Labor, Sector-Based Apprenticeship grants to support advanced worker training through innovative apprenticeship partnerships among institutions of higher education, workforce development organizations, economic developers and industry employers.
- America’s Promise Job Driven Grant, to support full deployment of TEAM Consortium job training and education.

Through data-informed strategies and collaboration with industry leaders, the GMPCC network has achieved progress across three primary goals: (1) creating direct connections between supplier networks and workforce development programs in a way that addresses industry needs; (2) growing business assistance available to supply chain firms for new product development, innovation and business growth; and (3) enhancing global competitiveness through collaboration and productivity improvements.

SUCCESSSES

- ❖ **Manufacturing Extension Partnership (MEP):** The US Department of Commerce, through Congressional Appropriations has continued to support and invest in the GPMCCs MEP Centers including Catalyst Connection and the West Virginia MEP (WVMEP). Both organizations have provided ongoing management consulting and technical assistance to GPMCC supply chain members to improve productivity and profitability. In Pennsylvania, the Industrial Resource Center (IRC) program has provided valuable match to the MEP program.
- ❖ **Tri-State Shale Coalition:** The GMPCC and many of its key members have been part of the launch and development of the “Tri-State Shale Coalition”, a regional collaboration to boost the prospects for manufacturing investment, expansion and jobs downstream of the emerging shale gas refining (cracker) sector – a sector that will be closely connected with the metals and advanced materials supply chains. Catalyst Connection, West Virginia University, and MEP Centers in Ohio have partnered to leverage \$400,000 in ARC POWER grant funding to launch and conduct the “Manufacturing Value Stream for Shale” project, which is identifying opportunities for small- and medium-sized suppliers to connect with and integrate into this emerging shale-manufacturing sector. With a supply chain analysis, supplier recruitment, regional workshops, and direct strategic and business planning assistance to suppliers from the MEPs, this project will help boost the value chain of this promising regional sector.
- ❖ **The Department of Defense Office of Economic Adjustment (OEA):** Innovation Works and GPMCC partner, JARI, have received OEA funding to support defense suppliers in the GPMCC region. The programs have focused on connecting suppliers to university assets, providing assistance in cyber security related DFAR requirements, and also helping to diversity their business into other markets. Specifically, JARI has been a recipient and participant in the state OEA funded programs. Over two years, JARI and partners have provided key diversification services to companies in the Cambria/Somerset region with specific detailed plans for moving forward with new markets. In addition, JARI has worked with approximately 40 dislocated workers from defense firms, assisting them with re-training and re-employment including entrepreneurial services. This work continues through the end of 2018.
- ❖ **Partnership for Economic Performance (PREP):** The Commonwealth of Pennsylvania funds economic development programs through PREP which encourages regional coordination in economic development efforts as a service to the business community. The PREP program is designed to integrate the delivery system historically served by the following core service providers: Industrial Resource Centers (IRCs), Industrial Development Organizations (IDOs), Local Development Districts (LDDs), and Small

Business Development Centers (SBDCs). As the region’s LDD, SPC is a core funded partner in the Southwestern Pennsylvania PREP. In 2016, Partnership served over 2,000 clients in nearly 6,000 separate counseling sessions. This resulted in over \$100 million dollars in increase sales and over 4,500 jobs created or retained. The Southwestern Pennsylvania Commission, SPC continues to be an integral part of the Partnership and continues to provide services to the Southwestern Pennsylvania business community through the SPC-specific business development programs.

GAPS & OPPORTUNITIES

- ❖ GPMMC supply chain members are recognizing the strategic importance of evaluating and adopting advanced technologies and are asking for assistance from local resources, such as the MEPs, universities and other partners. The technologies of Industry 4.0, such as robotics, 3D printing, Internet of Things, Cloud Computing, Cyber- security, are being quickly deployed in large companies, while small companies may be falling behind. The Wall Street Journal recently reported (July 16, 2018) that it’s the “world’s biggest companies that hog gains from innovation”. It notes that productivity growth is one of the most important drivers of rising living standards, and that economists have discovered an unsettling phenomenon. While the top companies are getting more productive, gains are stalling for everyone else. Small companies are not keeping up with the pace of technological change, thereby stifling their productivity gains. It is critical for the GPMMC region, that intermediaries continue to play a critical role in driving innovation and technology adoption in both products and processes, to assure rising productivity among all members of our community.

GMPCC has collaborated to achieve progress toward two goals focused on addressing research and innovation challenges: (1) leveraging university research capabilities to advance manufacturing technology, accelerate commercialization and foster manufacturing innovation and (2) supporting entrepreneurship and leveraging the Maker Movement.

SUCSESSES

Innovation Works, The University of Pittsburgh, Carnegie Mellon University, JARI and Catalyst Connection are collaborating on several initiatives to support advanced technology, support entrepreneurs, and connect start-ups to advanced manufacturing companies, and to connect advanced manufacturers to university resources. These programs are working together to establish a strong eco-system for technology and innovation in the GPMMC region.

AlphaLab Gear's Manufacturing Cycle:

In September 2017, Innovation Works (IW) and their East Liberty-based hardware accelerator **AlphaLab Gear** announced the launch of their Manufacturing Module, a 38-week program that takes startups with physical products through each step of the manufacturing process. It will also show them how to produce their products cost-effectively, locally and with advanced manufacturing techniques. The new module specifically focuses on manufacturing at scale: design for manufacturing, tooling, regulatory compliance, quality control, vendor negotiations, inventory management/fulfillment, and connections to manufacturers and supply chains. Three of the five companies that participated in AlphaLab Gear's first Manufacturing Module are in the energy sector.

The Scalable Innovation Program:

As mentioned above, AlphaLab Gear accelerator companies (and other hardware startups in the IW Seed Fund portfolio), are encouraged to design their products for U.S. manufacturing, and IW coaches those startups on the most effective ways of realizing that goal. As the startups scale, the local manufacturing supply chain needs to engage to allow for that growth. However, it has been challenging to engage existing manufacturers in working with these early stage companies, as the startup companies initially need only small batches produced, and the manufacturers oftentimes do not recognize the value of engaging with these companies that have small product orders. At the same time, many startups initially do not recognize the value in fostering relationships with their suppliers. They need parts for prototypes and beta products, but they are not thinking about long-term supplier relationships, design for manufacturing, cost-of-goods reduction or quality control. An intermediary like IW is needed to educate both parties and bring them together – someone who understands the unique needs each party has and can speak the languages of both manufacturers and startups, acting as convener, translator and moderator.

Moreover, the startups need guidance from the supply chain manufacturers in their product design, before they even are ready to order a small batch of supplies; and the manufacturers need to adapt their manufacturing processes to accommodate small-batch orders and make such orders cost-effectively.

In recognizing these challenges, IW has developed a program called **Scalable Innovation** – launched in 2016 – which provides a suite of services to startups and manufacturers, including: assessing supply chain needs of the startups in IW’s portfolio; building of one-on-one relationships with manufacturers and startups that can then be paired; holding a series of events that educate manufacturers and startups about how best to work with each other; hosting “design jams” and “build jams,” which are sessions where multiple manufacturers, customers and product specialists provide feedback and input into the design and manufacturability of a startup’s product; developing “speed dating” opportunities so that manufacturers and startups may serendipitously find each other; and hosting “field trips” so that startups can understand certain manufacturing processes. These activities help new companies find suppliers locally and help those suppliers adapt to new customer needs, building a strong regional supply chain that can be accessed by startup hardware companies for years to come. There are additional downstream benefits to this initiative. Most of southwestern Pa.’s manufacturers are located in rural counties and economically distressed communities. As these manufacturers grow their business on the scaling of the startup hardware companies, they begin to bring economic growth to their communities that has been elusive in recent decades of generally stagnant economic growth. To date, Scalable Innovation has connected with over 100 manufacturers and has formally engaged with 39 of them, pairing them with 25 IW startups. These manufacturers are located across the nine counties of southwestern Pa.

The University of Pittsburgh Institute for Entrepreneurial Excellence (IEE)

The University of Pittsburgh Institute for Entrepreneurial Excellence (IEE) has launched several programs to support manufacturing focused entrepreneurs in distressed and coal impacted communities. The programs include the following:

- **Mining your Business**
 - Mining your Business will provide entrepreneurial education and assistance to coal miners in Greene and surrounding counties who are considering starting their own business. The SBDC’s goal is to provide entrepreneurial educational and consulting services to emerging and existing entrepreneurs in these targeted counties so that they can start a new venture, increase sales, and create new jobs.
- **Planning for Profits**
 - Planning for Profits will provide free, proven “lean business” training programs to Main Street small businesses and entrepreneurs. Lean methodology – which involves increased consumer feedback and adaption to it – has long proven popular in technology start-ups, driving companies from a traditional business plan to a more simplified, step-by-step approach.
- **Planning for Profits - Decision Makers**
 - The feedback received from the past participants of the Planning for Profits class is that they desire to have additional training and entrepreneurial support as their business continues to evolve. We intend on developing curriculum and execute a class that will help existing business owners make sound business decisions in all aspect of the business including: marketing, financing, human resources, etc.

- **Supply Chain Consulting**
 - Through active networking with procurement and purchasing officers from larger businesses, the IEE’s supply chain consultant will uncover specific needs that can be fulfilled by small businesses in Fayette, Washington and Greene Counties. Then, by searching through the companies in the IEE portfolio, the consultant will help them complete all documentation necessary to meet the larger businesses’ procurement guidelines. This service will constitute a win-win for both the larger businesses – diversification of supply chain – and the small businesses – expansion to new markets.

- **Manufacturing Assistance Center / PantherLab Works**
 - In 2017, the MAC relocated to a state-of-the-art facility in Homewood and has become a technology engagement center for the community. In addition to technical education, the MAC operates a makerspace for the community, offering educational programming for schools and small business development services through PantherlabWorks, an initiative of the University of Pittsburgh’s Institute for Entrepreneurial Excellence. The MAC is a true success story of what happens when a university invests in the community and America’s workforce.

Carnegie Mellon University / Advanced Robotics in Manufacturing Institute

Carnegie Mellon University (CMU) was awarded the Manufacturing USA Institute focused in robotics and automation in January 2017. Now, Advanced Robotics for Manufacturing (ARM) is the nation’s leading collaborative in robotics and workforce innovation. Structured as a public-private partnership, ARM accelerates the advancement of transformative robotic technologies and education to increase U.S. global manufacturing competitiveness.

America Makes – National Additive Manufacturing Innovation Institute

The GPMMC region has continued to be supported by America Makes. America Makes is the national accelerator for additive manufacturing (AM) and 3D printing (3DP), and is the nation’s leading and collaborative partner in AM and 3DP technology research, discovery, creation, and innovation. Structured as a public-private partnership with member organizations from industry, academia, government, non-government agencies, and workforce and economic development resources, we are working together to innovate and accelerate AM and 3DP to increase our nation’s global manufacturing competitiveness.

America Makes was established in 2012, is based in Youngstown, Ohio, and is the flagship Institute for Manufacturing USA, the National Network for Manufacturing Innovation. America Makes is managed and operated by the National Center for Defense Manufacturing and Machining (NCDMM).

Catalyst Connection / Embedding in Manufacturing USA Institutes: Catalyst Connection has received funding from the NIST MEP program for an Advanced Robotics-MEP (AR-MEP) Collaborative, and for a Additive Manufacturing Collaborative, that is developing, piloting and demonstrating a business model that effectively transitions robotics technology and additive manufacturing technologies to small- and mid-sized manufacturers in the GPMMC region. The funding is allowing Catalyst Connection staff to be embedded at the ARM and America Makes Institutes to work in close collaboration with institute staff.

Creator Square Johnstown

Creator Square is a pioneering artisan residency program using makerspace as the key to a vital new community development strategy. By creating a space and then inviting revolving classes of “Creative Masters,” we are creating successive groups of validated makers who can then go out into our communities with the tools to be artisans, small batch manufacturers, up-cyclers, and so on. They will be the vanguards in reinventing neighborhoods, adding to our arts culture and creating jobs.

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Catalyst Connection / Maker to Manufacturer (M2M): Catalyst Connection has secured funding from the Economic Development Administration to establish a regional “Maker-to-Manufacturing Virtual Accelerator” (“M-to-M”) to support product commercialization. M-to-M combines a start-up mentoring and support system, a Supply Chain Buyers Network, hands-on university technical assistance, and start-up mini-grants to support new and growing small businesses in the making and advanced manufacturing fields, particularly in small and rural areas of southwest Pennsylvania which are seeking reinvention as the coal sector and its associated supply chains decline.

GAPS & OPPORTUNITIES

The recently released Brookings Institution Report on “Capturing the Next Economy: Pittsburgh’s rise as a Global Innovation City” provides insight into the GPMMC gaps and opportunities relating to research and innovation, and advanced manufacturing. The report notes that Pittsburgh is home to a number of advanced industries that are comprised of companies of all sizes, ranging from startups to global headquarters. Many of these firms rely on the university assets, which rank ninth among the largest 100 cities for the amount of university R&D, in powerhouse fields such as robotics and artificial intelligence. However, despite the significant assets, the region’s technological strengths have not translated into broad-based economic opportunity or growth. Specifically, the connection between research and industry strengths is weak, and dampens the potential. The report recommends a strong, renewed focus on innovation clusters that include advanced manufacturing, leveraging the investments in the ARM institute, Catalyst Connection and other partners to connect the region’s manufacturing supply chain to the research institutions for technology and workers.

PILLAR 4: INFRASTRUCTURE & SITE DEVELOPMENT

GMPC has been strategically working to address infrastructure and site development needs through progress toward three goals: (1) improving transportation access to and from key industrial sites; (2) redeveloping targeted industrial sites to accommodate the infrastructure needs of firms and supply chain companies; (3) enhancing environmental sustainability by focusing on clean and green technologies to improve sites and manufacturing processes.

SUCCESSSES

In August 2017, Pittsburgh's North Side Industrial Development Company (NSIDC) received \$600,000 in **U.S. EPA brownfields** grants to assess abandoned industrial sites in and around Pittsburgh that may be contaminated with hazardous or petroleum substances so that they can be cleaned up and redeveloped.

Likewise, the **City of Weirton, WV and the Business Development Corporation of the Northern (WV) Panhandle** have secured

\$800,000 in U.S. EPA Brownfields grant funding and nearly \$2 million in U.S. EDA planning and Public Works / Economic Development grant funding to transform 1,500 acres of the former, vacant Weirton Steel plant and other brownfield properties into new manufacturing industries, including those focused on metals and advanced materials sectors. This includes the planned new "Three Springs Conference Center & Economic Incubator" on a former brownfield in Weirton.



Johnstown has secured U.S. Department of Defense and U.S. Economic Development Administration funding to transform a blighted downtown building into "**Creator Square**", a maker space and live/work studio center for artisans and entrepreneurs. Johnstown seeks Commonwealth support to equip Creator Square with maker and educational technologies.

The Power of 32 **Site Development Fund** was established as a private investment fund that supports site development and was adopted as part of the [Power of 32](#) regional visioning process to identify common challenges and opportunities and create a thriving 32-county, four-state region. GPMMC partner, the [Allegheny Conference on Community Development](#) (ACCD) agreed to lead the effort to establish the Site Development Fund, which – to date – has provided gap financing to move [several regionally significant projects](#) forward totaling a \$49 million investment. The projects that have moved forward in the GPMMC region include:

- Trimodal Terminal - The fund provided the capital necessary to accelerate brownfield remediation while also investing in development of site infrastructure to make the site more attractive to companies looking for rail- and barge-served sites in the region
- Clinton Commerce Park: The recent investment in the region by Royal Dutch Shell and others is proving the need to have more pad-ready, developable sites available to support regional growth

- Hazelwood Green: The Power of 32 Site Development Fund filled a remaining gap in financing for site improvements and provided flexible terms required at early stages of development. This source of loan funds is very critical since the market is demanding shorter timeframes for delivery of owner-occupied building or tenant space.”
- Turnpike Industrial Park: A strategic location and proximity to three major interstates: I-376, I-79 and I-80. The site is also within 15 miles of the Royal Dutch Shell petrochemical facility being constructed in Potter Township, Pa. and 28 miles from Pittsburgh International Airport.

GAPS & OPPORTUNITIES

Johnstown, PA, is underway with a major, State-funded transportation initiative that seeks to restore the Johnstown Train Station/Amtrak facility as a community economic hub, repair the Inclined Plane, and conduct complete street and bike/pedestrian trail upgrades to connect key civic and economic assets, including planned redevelopment of vacant factories into future-focused manufacturing and making in the Downtown, the Cambria City Arts & Culture District, and the broader region.

Monaca has a pending U.S. DOT INFRA application seeking \$6.58 million to upgrade critical segments of the Monaca Gateway Project, which will reconstruct, expand, and enhance the Route 18/Pennsylvania Avenue Corridor from 9th Street through the downtown to support the massive increase in truck and industry traffic already resulting from the new Shell Chemical Appalachia’s “U.S. Pennsylvania Petrochemicals Complex.”

PILLAR 5: TRADE & INTERNATIONAL INVESTMENT

To build upon Pittsburgh's leading export market in metals manufacturing, GPMCC has achieved progress across to goals: (1) improving the capacity of supply chain firms to access export markets and (2) attracting existing manufacturers to locate in the region.

SUCSESSES

GPMMC partner, the Southwestern Pennsylvania Commission (SPC) manages the Regional Export Network (REN) which provides manufacturers and service firms with export development services, including market research, market entry strategy development, technical support, and access to grants and financing programs.

The Pittsburgh Regional Alliance (PRA), an affiliate of ACCD, leads the region's advanced manufacturing business attraction efforts. In 2017, the PRA reported 51 business investment deals in advanced manufacturing, totaling \$165 million in capital investment, projecting 1,335 new jobs and 1,135 retained jobs. Manufacturing continues to be a top sector for business attraction wins in the region.

GAPS & OPPORTUNITIES

❖ **Boosting the Region to National & International Manufacturers & Investors:** The Tri-State Shale Coalition has partnered with the Pennsylvania Department of Community & Economic Development, the West Virginia Development Office, and the Jobs Ohio state economic offices to create a coordinated, interstate message about the assets and opportunities for investment and growth in the manufacturing sectors of this tri-state region. With a new branding, marketing, and outreach strategy for attracting domestic and global manufacturing investment, the Tri-State Coalition plans to seek partnership from the U.S. Economic Development Administration (EDA) to implement this regional manufacturing strategic outreach campaign. The Coalition will seek EDA Planning Grant resources in Summer 2018 to leverage state and local resources for this nationally-significant manufacturing effort.

PILLAR 6: OPERATIONAL IMPROVEMENT AND CAPITAL ACCESS

GPMCC partners a continuously working to improve productivity in manufacturing, which drives demand for equipment and working capital, as well as new technologies. GPMCC's progress in the area has focused on two goals: (1) increasing investment funding available for mature and startup firms to spur growth or improve operational capacity and efficiency, including energy efficiency, and (2) supporting startup companies and developing mechanisms to link to existing firms.

SUCSESSES

With funding support from the Appalachian Regional Commission (ARC) through the Southwestern Pennsylvania Commission, Catalyst Connection has been administering a highly-subscribed **ARC POWER Mini-grant Program** that provides grants to local companies for improvement projects. These projects, which are already leveraging three times the investment of the mini-grant, are expected to have millions of dollars of impact into the community with increased sales, productivity and new jobs. Catalyst Connection has a pending ARC POWER application to expand this “economic gardening” approach that provides targeted and direct assistance to companies to help diversify markets, leverage new opportunities in emerging sectors and develop robust industry clusters around these sectors. The project will support small and medium manufacturing entities (SMEs) in targeted coal-impacted counties in the 48-county region that are experiencing the most deleterious impact of the change in the Appalachian coal market. This PA MAKES project will replicate and extend this successful program across the four participating MEPS / Pennsylvania Industrial Resource Centers (IRCs) in Appalachian Pennsylvania, working together with the statewide “Pennsylvania IRC Network” (IRCN) supporting manufacturing innovation across the commonwealth.

GAPS & OPPORTUNITIES

PA MAKES: The PA MAKES (Manufacturing Assistance for Keystone Entrepreneurial Success) project will replicate and extend Catalyst Connection's successful, highly subscribed Manufacturing Mini-grant program that provides targeted and direct assistance to small and medium-sized manufacturing companies to help diversify markets, leverage new opportunities in emerging sectors and develop robust industry clusters. Catalyst Connection and partners have secured an ARC POWER grant and are now seeking a U.S. EDA Economic Adjustment Assistance grant that will be used to expand the mini-grant program across all seven participating MEPS / Pennsylvania Industrial Resource Centers (IRCs) in Pennsylvania, working together with the statewide “Pennsylvania IRC Network” (IRCN) supporting manufacturing innovation across the Commonwealth.

LEVERAGING RESOURCES TO SUPPORT GPMCC PRIORITIES & GROWTH

This section (a) outlines a strategy for how GPMCC can best organize to pursue and leverage resources for implementation of priority projects and (b) provides a matrix of federal and state (West Virginia and Pennsylvania) funding resources that align with the program and initiatives of GPMCC partners. This section outlines GPMCC's robust and proactive approach for leveraging resources that will propel progress in the priority areas, and provides GPMCC partners with a tool to align programs and initiatives with target federal and state (West Virginia and Pennsylvania) funding resources organized around the six pillars of an effective IMCP manufacturing cluster.

POSITIONING THE REGION FOR LEVERAGE

GPMCC's approach to resource advocacy includes the following steps and organizing tactics:

1. MAINTAIN A VIBRANT TEAM WITH IDENTIFIED LEADERS & MANAGERS

GPMCC is supported by a core team of leaders and a broad network of multi-sector stakeholders. Catalyst Connection, WV MEP, and JARI form the core team that undertakes continued coordination, leveraging, project management, resource allocation, and general momentum. Plans to scale and enhance the region's successes demand a high level of organizational capacity from the lead agencies to foment engagement, maintain community backing, serve as spokespersons, and coordinate meetings and events. High levels of stakeholder collaboration will be critical to demonstrating to potential funders that GPMCC projects have the support of key stakeholders and that applicants are well-prepared to implement grant resources and get the job done.

Catalyst Connections intends to apply for additional EDA Planning funding to support tasks and activities that maintain the level of organization that has made progress possible and will be needed to achieve next level successes in bolstering GPMCC's global competitiveness.

2. IDENTIFY PRIORITY PROJECTS & INITIATIVES

By identifying key priorities, the GPMCC community can determine how it will allocate collaborative efforts, distribute shared resources, pursue external funding, make its political asks, and set the right expectations for the public and key partners about how manufacturing cluster growth will proceed. GPMCC will maintain a list of high-level strategic priorities, as well as key projects that fall within each priority. Priorities will be continually re-evaluated and re-confirmed as each project progresses, based on headway with private sector investment, available local/state/federal resources, and other opportunities. Horizontal coordination on planned projects and priorities will be critical to enhancing efficiency by leveraging resources, reducing redundancy, and revealing opportunities for regional synergy.

3. ENGAGE FUNDERS EARLY

Now that GPMCC has active partners within the federal, state, and local governments, development organizations, and private sector, vertical coordination of the GPMCC strategy will ensure that (a) stakeholders maximize available assistance and guidance, and (b) funders and agency officials are early supporters of key projects. Catalyst Connection will continue to serve as a liaison between GPMCC stakeholders and key funders, helping to shepherd projects from

infancy to implementation. Catalyst Connection will continue to approach agency leaders about priority projects; conduct visits to funder HQs (Washington DC) and regional offices (typically Philadelphia); and invite agency officials for site and project tours, collaborative roundtable events, and project workshops in the region to build their ongoing support.

4. ALIGN PROJECTS WITH FUNDING SOURCES

GPMCC stakeholders have successfully tapped into many of the best and most significant sources of federal, state, local, private sector, and philanthropic funds for workforce and economic development. Under a new administration at the federal level, we are already seeing some significant changes to federal grant funding from previous funding cycles. Catalyst Connection will work with strategic partners to review grant solicitations; confer with funding officials to determine whether the key projects are eligible and competitive for specific resources; and consider whether and how particular projects can be shaped or changed to reflect the priorities of funders. Catalyst Connection will continue to keep GPMCC partners apprised of new developments in federal funding and key funding opportunity announcements through its listservs and convenings.

5. PREPARE FOR GRANT WRITING

GPMCC partners are encouraged to collaborate to prepare ahead of time to write effective grant applications and to not wait until you see a notice of funding opportunity and submission deadline. Partnerships applying jointly for resources are encouraged to determine the best local agency or other entity to be the lead applicant and confirm key application partners. Partners should identify the internal/external grant writer(s) for each application and have the lead grant writer review past application materials to consider how to position future applications to be more effective. In situations where partners have applied unsuccessfully for those resources previously, they should get a debrief from the agency on why the application was not selected for funding.

6. ESTABLISH MATCHING/ LEVERAGE STRATEGIES

The most competitive funding requests will have committed matches and high leverage, which takes collaborative financial planning, budgeting, and requests to key funding stakeholders well before grants become due. GPMCC partners are encouraged to create match/leverage strategy for each funding request, and do the work necessary to explore and secure match commitments from key funding partners from within the coalition, community groups, foundations, government agencies, and other potential supporters.

7. CREATE STRATEGIC PLANS & BRIEFING MATERIALS FOR EACH PRIORITY PROJECT

When ready to proceed on a specific project or project component, GPMCC partners are encouraged to create and share a written, step- by-step strategy for pursuing funding. This memo can describe the specific objective for that project, describe the targeted source(s) of funding, identify the necessary entities and stakeholders, specify those responsible for each task, establish timelines, and identify contingency plans. Further, partners are encouraged to breakdown project needs with a concise briefing sheet for each specific project, phase, and/or component as appropriate to provide stakeholders and potential funders with a succinct explanation of the project scope, objectives, benefits, status, progress, supporters, and active requests. Developing

briefing sheets on the front end of a project often helps to formulate a consensus on a cohesive project concept before moving forward with a full grant application. Additional briefing sheets specific to specific project components/phases can also be beneficial for more targeted advocacy efforts, as well as for providing information to key stakeholders when seeking letters of support or commitments for grant applications.

8. CONVENE FUNDER ROUNDTABLES

A proven tactic for building federal support for local revitalization projects is to hold a “Revitalization Roundtable” event that convenes key officials from target federal agencies, along with other stakeholders including state officials, community partners, philanthropic officials, and state/federal legislative representatives or staff. A roundtable can focus on one or a small number of projects, highlight progress, identify needs, bring key relevant parties into discussions on how to meet those needs, and build momentum for future support. For example, federal, state, regional, local, private sector, non-profit and other partners will convene in Johnstown in July 2018 for an EDA-sponsored “Regional Economic Diversification Summit” (REDS) determine approaches for leverage the resources needed to boost regional tourism, upgrade failing infrastructure, enhance job-training opportunities, and revitalize the Johnstown downtown core.

9. CELEBRATE SUCCESS

Success breeds success. As implementation activities progress, GPMCC partners will invite key stakeholders, including funders, federal and state elected officials, and others, to groundbreakings and ribbon-cuttings and work with the media to publicize progress. This will create momentum for the project and encourage federal agencies that seek to collaborate to join in and share in the success.

GPMMC PRIORITY RESOURCE OPPORTUNITIES

This section includes a matrix of key funding opportunities to support programs and initiatives across the six IMCP pillars. The philanthropic foundation community is also active in supporting these initiatives, but foundation grant funding is not listed in this matrix. The matrix includes the purpose of each grant program, award amounts, and expected deadlines, as well as links to detailed information.

Opportunity	Purpose	Amount & Match	Exp. Deadline
WORKFORCE & DEVELOPMENT			
<u>DOL “Scaling Apprenticeship Through Sector-Based Strategies” Grant</u>	Public-private partnerships involving educational institutions, business trade associations, and other partners can apply for grants to develop and implement innovative, high-quality registered apprenticeship programs	\$1 million to \$12 million / 35% match	October 2018
<u>EPA Environmental Workforce and Job Training Grants</u>	To support programs that recruit, train, and place local, unemployed and under-employed residents with the skills needed to secure full-time employment in the environmental field.	\$200,000	Exp. December 2018
<u>NHE Emergency Dislocated Worker Demonstration Grant</u>	To test innovative approaches to address the economic and workforce-related impacts of the opioid epidemic; provide training and support activities to dislocated workers who are or have been impacted by the opioid crisis; and, provide training that builds the skilled workforce in professions that could impact the causes and treatment of the opioid crisis, including addiction and substance-abuse treatment, mental health, and pain management.	\$500,000 and \$5 million	Rolling
<u>ARC POWER</u>	To support investments that are regional, strategic, and transformational and that maximize the economic revitalization of Appalachia’s coal-impacted communities and regions	\$400,000 to \$1.5 million	Cycle 2 Due August 29, 2018
<u>EDA Assistance to Coal Communities</u>	To assist communities severely impacted by the declining use of coal through activities and programs that support economic diversification, job creation, capital investment, workforce development and re-employment opportunities	\$100,000 to \$3 million	Summer/Fall 2018

PA Next Generation Industry Partnerships	To develop and launch employer-driven next generation sector partnerships	Up to \$25,000; \$10,000 required match	Exp. August 2018
WV Governor's Guaranteed Work Force Program	Provides financial and technical assistance to West Virginia's new and expanding businesses for training, retraining or for upgrading the skills of existing and new employees	Companies request individual funding	Rolling
PA Work Opportunity Tax Credit	Federal tax credit available to employers who hire and retain veterans and individuals from target groups with significant barriers to employment	WOTC is 40 percent of the first \$6,000 in wages, for a maximum credit of \$2,400	Rolling
SITES PREPARATION & INFRASTRUCTURE UPGRADES			
<i>Brownfields Challenges</i>			
U.S. EPA Region 3 Targeted Brownfields Assessment	To evaluate potentially contaminated sites in distressed areas due to prior use	Technical Assistance	Ongoing
U.S. EPA Brownfields Assessment Grant	To evaluate potentially contaminated sites that may need cleanup from prior use	Up to \$300,000 or \$600,000 for coalition grants No match required	Fall 2018
U.S. EPA Brownfields Cleanup Grant	To cleanup contamination on properties owned by public or non-profit entity	\$200,000 20% match required	Fall 2018
U.S. EPA Brownfields Multipurpose Grant	To provide grant funding for assessment, cleanup, and reuse to target key projects	Up to \$ 1million 20% match	Fall 2018
U.S. EPA Brownfields Cleanup Revolving Loan Fund	To provide seed funding for a revolving loan fund for loans and subgrants to remediate multiple properties owned by public, non-profit, and private entities	Up to \$1 million 20% match required	Fall 2018 Spring 2019 for supplemental application
U.S. HUD Community Development Block Grant/Section 108 Loan Guarantee	To eliminate blighted properties and benefit low- moderate-income residents; can be used for cleanup, demolition, site preparation, infrastructure upgrades, and site development	Local govts. can borrow up to 5 times annual CDBG allocation	Rolling
<i>Transportation & Infrastructure</i>			

<u>U.S. DOT Better Utilizing Investments to Leverage Development (BUILD) Transportation Discretionary Grant</u>	To support transportation projects that promote safety, accessibility, mobility, and economic redevelopment New priorities emphasize streamlining, public safety, and leveraging of funds	Average grant is \$13 million Must apply for minimum of \$5 million or more 20% match minimum	Annually
<u>U.S. DOT BUILD Planning Grant</u>	To support planning of large-scale transportation projects, including environmental analysis, feasibility studies, design, etc.	\$15 million available, no minimum 20% match required	Potentially annually, as determined by Congress
<u>U.S. EPA Building Blocks for Sustainable Communities</u>	To help cities address smart growth challenges like equitable development, green infrastructure, and Complete Streets	Technical assistance from EPA staff and EPA-hired consultant teams No match required	Expected late summer-early fall
<u>U.S. DOT INFRA Grant</u>	To support large and small transportation projects that promote safety, accessibility, and mobility for freight	Small grants are up to \$25 million Large grants are up to \$100 million 40% match required	Fall 2018
<u>ARC Local Access Road Program, Community Infrastructure, & Asset-Based Development</u>	State can use up to \$3 million of its ARC Highway Development funds or other ARC Area Development funds, for design/engineering, ROW acquisition, and/or construction of local access roads to support industrial, commercial, and community projects; community Infrastructure funds for water, wastewater, and brownfields projects; Asset-Based Development to provide planning and development money for industrial parks	\$50-\$500,000 for Community Infrastructure \$250,000-\$2 million for Access Roads \$5,000-\$500k for Asset-Based Development projects 50% match	Ongoing
<u>PennDOT Multimodal Transportation Fund Grants</u>	To support projects (1) which coordinate local land use with transportation assets; (2) related to streetscapes, lighting, sidewalk enhancement and pedestrian safety; (3) improving connectivity or utilization of existing transportation assets; and (4) related to TOD.	Up to \$3 million 30% required match	Summer 2018

PennDOT Transportation Alternatives Program	Provides funding for on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation, trails that serve a transportation purpose, and safe routes to school projects	\$250,000 - \$1 million	Fall 2018
WV DOT Transportation Alternatives Program	See above.	\$50,000 to \$400,000; 20% match	Early 2019
<i>Economic Development</i>			
U.S. EDA Public Works & Economic Development Facilities Grant	For public infrastructure and site development that supports quality economic development and high-skills jobs	Average grant ~\$1.1 million, up to ~\$3 million 50% match	Ongoing
Opportunity Funds	To incentivize private investment in distressed areas through deferred capital gains taxes	Capital gains tax benefits Depends on duration of investment	When IRS guidance promulgated
National Development Council (NDC), Public-Private Partnership (P3)	NDC designs-finances-builds-operates public facilities and bring non-profit bonding funds Municipality would lease to own facility from NDC	Guarantees a fixed-price of ~25% less than local bid costs	Rolling
U.S. Treasury New Market Tax Credits	For infrastructure and development that supports job creation A qualified “Community Development Entity” can invest in a project, compensated by an investment tax credit	Can subsidize up to 20% of a project’s capital needs with NMTC; projects typically amount to \$3-\$7.5 million in equity investment	Rolling
PA Redevelopment Assistance Capital Program	Reimbursement program for eligible project costs including, construction, land acquisition, permitting and any interest costs paid during construction	Minimum project cost of \$1 million	Jan – Feb. 2019
PA Business in Our Sites	Provides grants and low-interest loans for acquisition and development of key previously utilized or undeveloped sites for future use by businesses, private developers, and others	Grant funds limited to \$250,000; no match; no limits to loan funding	Rolling
PA Industrial Sites Reuse Program	Provides funds for Phase I, II, & III environmental assessments and remediation/removal of hazardous	Grants Assistance: Assessment: Up to \$200,000	Rolling

	substances at sites where industrial activity was conducted prior to July of 1995	Remediation: Up to \$1,000,000 25% match	
WV Development Office Community Advancement and Development Partnership	To support meaningful enhancement of communities through economic and community development initiatives and projects	\$100,000 No match required	Spring 2018
INNOVATION / R&D			
SBA Growth Accelerator Grant	For accelerators and incubators which support small business startups and entrepreneurs	\$50,000 No match	Exp. Spring 2018
EDA Regional Innovation Strategies i6 Grant	To build regional capacity to translate innovations into jobs through proof-of-concept and commercialization assistance to innovators and entrepreneurs	Up to \$500,000	Exp. Summer 2018
PA Ben Franklin Technology Partners Challenge Grant Program	Provides funds to businesses for access to capital, business expertise, technology commercialization services to advance the development of new technologies and for the generation, conservation, and transportation of alternative and clean energy	1:1 match	June 2018
WVEDO Flex-E-Grant	Entrepreneurship, strategic plans, capacity building	\$10,000	Ongoing
BUILDING THE SUPPLY CHAIN			
DOD Defense Industry Adjustment	Funds help communities affected by defense downsizing to shift workers to new markets and new sectors.		Rolling
See also: ARC POWER, EDA Assistance to Coal Communities; and EDA EAA & Public Works			
TRADE & INTERNATIONAL INVESTMENT			
IERC International Engagement Ready Communities Competition	To support empirical research on successful international engagement strategies and develop best practice reports and a competitiveness assessment too	Up to \$600,000	Fall 2018
West Virginia First STEP-Next STEP	Provides funding to West Virginia small businesses looking to enter (first step) or expand (next step) in the global marketplace	Up to \$10,000 per STEP client or \$15,000 for WV	September 29, 2018

		Trade Show Pavilions	
<u>PA Global Access Program</u>	To enhance the capability of small to mid-sized Pennsylvania companies to increase export sales	Up to \$5,000 per to qualifying companies to reimburse up to 75% of eligible expenses associated with specific export promotion activities	
ACCESS TO CAPITAL & OPERATING IMPROVEMENTS			
<u>PA Venture Investment Program</u>	To provide loans to venture capital companies looking to make investments in companies located in the Commonwealth	Financing	Exp. to expire this year
See also: SBA Growth Accelerator Grant; EDA Regional Innovation Strategies i6 Grant			

APPENDIX A. ESTIMATE OF FUNDING SOURCES FROM 2015-2018

Funding Source	Description	Approximate Funding
API Partners (CW Benedum Foundation and Chevron Appalachia LLC)	Explore the New Manufacturing; Fab Labs; Service to Opportunity; TEAM Consortium	\$1,790,000
Appalachian Regional Commission (ARC)	POWER Initiative	\$2,220,000
US Department of Defense, Office of Economic Adjustment (DOD OEA)	Initiatives for Defense Suppliers and Communities	\$2,480,000
US Department of Defense, Manufacturing USA Institutes	America Makes, ARM Institute	\$19,800,000
Economic Development Administration (EDA)	Planning, Public Works, Economic Adjustment Assistance, I6 Challenge	\$6,590,000
Environmental Protection Agency (EPA)	Brownfield Site Assessment and Revolving Loan Fund grants	\$1,400,000
NIST Manufacturing Extension Partnership (MEP)	Regional Initiatives, Embed in Manufacturing USA	\$810,000
RK Mellon Foundation	Employment Demand Study	\$125,000
Pennsylvania Department of Community and Economic Development (PA DCED)	PA Manufacturing Fellows Initiative (PMFI)	\$445,000
Misc Sources (other Foundations and Corporations)	BOTSIO, other	\$820,000
Estimate of New Funding for GPMMC:		\$36,480,000

APPENDIX B. GMPCC PARTNERS & SUPPORTERS

ACTIVE PARTNERS

Allegheny Conference on Community and Economic Development
Chevron Appalachia, LLC
Claude Worthington Benedum Foundation
Carnegie Mellon University
Catalyst Connection
Innovation Works
JARI
RK Mellon Foundation
Southwestern Pennsylvania Commission
University of Pittsburgh, Institute for Entrepreneurial Excellence
West Virginia University

LOCAL ANCHOR INSTITUTIONS

Post-Secondary Institutions: Community Colleges

Community College of Allegheny County, Pittsburgh, PA
Community College of Butler County, Butler, PA
Westmoreland County Community College, Youngwood, PA
Community and Technical College System of West Virginia, Charleston, WV
Pierpont Community College, WV
West Virginia Northern Community College, Weirton, WV

Labor and Community Organizations

International Association of Sheet Metal, Air, Rail and Transportation Workers, (SMART) Local Union 12, Pittsburgh PA
United Steel Workers, National President, Leo Gerard

Major Employers (Industry, Public Corporations)

Alcoa Corporation and Alcoa Foundation, Pittsburgh, PA
ATI, Pittsburgh, PA
Chevron, Moon Township, PA
PPG Industries, Allison Park, PA
RTI International Metals, Coraopolis, PA

Small Business Owners

Angstrom Sciences, Duquesne, PA
Astrobotic, Pittsburgh, PA
Butler Technologies, Butler, PA
Du-Co Ceramics, Saxonburg, PA
Fairmont Tool, Fairmont, WV
Gautier Specialty Metals, Johnstown, PA
Gerome Manufacturing, Uniontown, PA
Hamill Manufacturing, Trafford, PA
Homer City Automation, Homer City,
Kopp Glass, Swissvale, PA
Mecco Marking and Traceability, Butler, PA
North American Hoganas, Hollsopple, PA O

berg Industries, Freeport, PA
Pace Industries, Loyalhanna, PA
Swanson Industries, Morgantown, WV
Universal Electric, Canonsburg, PA

Local Governments

Allegheny County, PA
Borough of Monaca, Beaver County, PA City of Johnstown, PA
City of Weirton, WV City of Wheeling, WV

State Governments

Pennsylvania Governor Tom Wolf
Pennsylvania Department of Community and Economic Development
Pennsylvania House Manufacturing Caucus, Representative Eli Evankovich, Co-Chair Pennsylvania
Senate Manufacturing Caucus, Senator Kim Ward, Co-Chair Pennsylvania Senate Democratic Leader,
Senator Jay Costa
West Virginia Governor Earl Ray Tomblin West Virginia Department of Commerce
West Virginia Development Office – International Division West Virginia Division of Energy

Regional Government Officials

Delegation of US Representatives from Pennsylvania and West Virginia: Representative Mike Doyle (PA)
Representative Mike Kelly (PA) Representative Tim Murphy (PA) Representative Keith Rothfus (PA)
Representative Bill Shuster (PA) Representative David McKinley, P.E. (WV)
Senator Robert Casey (PA) Senator Patrick Toomey (PA)
Senator Shelley Moore Capito (WV) Senator Joe Manchin III (WV)

ADDITIONAL SUPPORTING PARTNERS

Financial Institutions

BDO USA, LLP, Pittsburgh, PA
S&T Bank and S&T Foundation, Indiana, PA
Somerset Trust Company, Somerset PA

Foundations

Claude Worthington Benedum Foundation, Pittsburgh, PA
National Tooling and Machining Foundation, Moon Township, PA

Industrial Development Corporations

Butler County Community Development Corporation, PA
Fay-Penn Economic Development Council, Fayette County, PA Greene County Industrial Developments,
Inc, Waynesburg, PA Westmoreland Industrial Development Corporation, Greensburg PA

Industrial Sites

RIDC and The Almono Partnership, Pittsburgh, PA
West Virginia Brownfields Assistance Center, Morgantown, WV

Industry Associations

Pittsburgh Technology Council, Pittsburgh, PA West Virginia Manufacturers Association

Makership Projects

Made Right Here (formerly New App for Make it In America), Pittsburgh, PA

TechShop Pittsburgh, Pittsburgh, PA

Manufacturing Extension Partnerships (MEP)

West Virginia MEP, Morgantown, WV

Catalyst Connection, Pittsburgh, PA

Small Business Development Centers (SBDC)

Indiana University of Pennsylvania SBDC, Indiana County, PA

Supplier Network Resources

Concurrent Technologies Corporation, Johnstown, PA

National Center for Defense Manufacturing and Machining and America Makes, Blairsville, PA Pittsburgh

Supercomputing Center, University of Pittsburgh

TechConnect West Virginia, South Charleston, WV

Utility

DQE Communications, Inc, Pittsburgh, PA

Workforce Investment Boards (WIBs)

Three Rivers WIB, Allegheny County, PA

Southwest Corner WIB, Beaver, Washington and Greene Counties, PA Tri-County WIB, Armstrong, Butler and Indiana Counties, PA

Northern Panhandle WIB, Hancock, Brooke, Ohio, Marshall, Wetzel and Tyler Counties, WV