**GO Virginia Region 2 Innovative Cluster Scale Up Breakout Group: Stage 2**

**September 9, 2021, 10 a.m.-11:15 a.m., Zoom webinar.**

Council members in attendance: Eddie Amos (Vice-Chair), Janice Crawford

Staff in attendance: John Provo, Julia Kell, Jason Schwartz

Public in attendance: Ken McFadyen, Luke Campbell, Kevin Byrd, Meredith Hundley, Stephen Diesel

The meeting convened at 10 a.m. and adjourned at 11:15 a.m.

Janice Crawford: To build on the cluster idea, we need to look at the areas of strength that we have in these industries that make up the cluster we’re discussing, and look at how we can help each other.

What John said to me on Tuesday that resonated with me is we don’t want to automatically jump to a solution; we really want to work together as a team, which is why it’s so important for Stephen, Jason, Ken, and Kevin to be on the call with us today to continue to kick things around, discuss ideas, and bring ideas to the table. Patience is a virtue. As we continue to fine tune this, we will get there.

The second thing that was a takeaway from me was the word **intervention**. The materials John provided today depict interventions, which are possible priority areas for cluster scale up. This matrix is helpful and provides a road map and a compass for us.

John Provo: I came into economic development in the ‘90s when every economic developer had met enough MBAs that they put Michael Porter’s book, *The Competitive Advantage of Nations*, on their desk. We started talking about economic regions and industry clusters. For folks who have read some of those case studies produced back in the day, it’s a rich narrative approach to talking about how industries grow.

When I talk to economic developers about this, I try to emphasize that it’s not just about mass. Although some critical mass is a threshold, it’s about the way that companies of different sizes and roles of production interact with resources and pools of support that exist in their proximity or extended networks. The industry cluster is about the exchange of knowledge and value to grow businesses and opportunities. A key part of GO Virginia was to give focus to clusters of related firms, and to do it in a way that placed an emphasis on growing the traded sector component of those clusters.

We’ve seen some great work that Meredith Hundley and her group have done to enrich the connections in our entrepreneurial ecosystem. In some ways, what we’re going to talk about echoes some of those same concerns.

When staff looked at things that were worth revisiting in our previous plan, we didn’t have a callout specifically to clusters, to how we helped and supported industry; we had a technology section that overlapped with talent and entrepreneurship. There were a few specific things but they were buried. We weren’t sending clear signals to potential applicants in the previous plan -- that we should give some consideration to these next level growth paths for firms.

As we look at these industry clusters, some sections of our clusters have very stable inputs, but there are others where there’s a traded sector push out of each of these clusters. Nationally, there are opportunities for innovation and high growth to happen, to scale these clusters up.

Also, the state has essentially created a lane in their framework, for how they organize our applications around the idea of cluster scale up.

Stephen Diesel: I think we could clarify how we define a cluster, since it’s a loose term. Sometimes it’s a shared focus on a very specific type of knowledge, but in other situations, it’s a bunch of interdependencies that build something. One great example I’ve seen in the past is the California wine industry – you have the growers, the tourist industry, and the bottling services and all of that is another way to define a cluster.

John Provo: California wine industry is the classic Michael Porter story too – if you haven’t read it, I’ll see if I can find a copy I can share with the group. There is as much art as there is science to this. Some of this is about form, but it’s also about function. And some of the function we can see in data, but some of the function is narrative. And there’s fuzzy edges around this.

We talked in the original plan, several years ago, about what’s emerging in our technology sector here, and we have folks who are building controls and systems for autonomy, and now they’re starting to have corporate linkups with manufacturers. For our purposes, we’re counting Torc in the emerging sector, but they have a corporate marriage in the manufacturing sector. I think that’s important to think about. We need to give applicants who want to come to us some direction, but we need to make sure we’re not creating restrictions that prevent them from spotting the things we can’t necessarily know.

We’re looking flat in the cluster growth, but coming out of the pandemic, it’s good we’re not losing ground. I think staff is pretty comfortable on the cluster definitions, and we tweaked them a little bit from a few years ago.

Eddie Amos: The wine industry is a Harvard business school case study; I’ll forward it to you, if you don’t have a subscription, I think you can get a temporary one to read the article. I’ll send it to you John, if you can forward it to everyone else.

We should think about using that type of example for our clusters. Can we come back and use Porter’s example of the wine industry as a thought process for our clusters and let other people build on it? No matter what we come up with, I can promise you if we bring ten more people into the conversation, they’ll tweak it and tune it and make it that much better.

John Provo: We can certainly take a pass at that in the report. We might be at a place where some of our clusters are maturing in a way that encouraging a more detailed look at some of them, if we can find a way to support, might be instructive to the overall effort.

**Highlights from August 18, 2021 Conversation**

Eddie Amos: In the first session we used blue-sky thinking -- don’t put bounds around it, think outside the box, give observations -- and now we’re starting to narrow the aperture in meetings like this. We came back with four areas at the kick-off meeting; one was focus on the problem solving, de-risking, and making connections. We talked about helping companies with different sizes come back and interrelate. The Botetourt County examples shared were good and probably blueprint items we could look at for the rest of the region. How do we create that corporate family that spreads across Region 2 so we can learn from the various conversations that we have?

We talked a lot about standard and scale up opportunities; how do we think about the various assets we have? Can we make processes actionable, predictable and repeatable?

There was a concern about making sure people understand what the clusters are in our ecosystem. How do we look at the problems, the similarities of the issues that we share across the region and put those into various clusters?

The more I think about the California wine industry example, I remember when I read that for the first time, and I thought it was brilliant. I hadn’t thought about it in ten years and I really thank Stephen for bringing that up, because that is a good example of how you take issues and bring them together.

For folks who weren’t in the meeting, please challenge assumptions; this is our joint plan and if we’re missing the mark, we need to get your feedback to make it better.

John Provo: Kevin’s group prepares for one of our federal friends what is called a SEDS plan, and we review and try to reflect on these. Each of the subparts of our GOVA Region has one of these. They also have interest in strategy and direction; their role is a little different in that they actually have to come up with a very focused prioritized list of fundable projects. GOVA from its start has wanted to stay one level above that, but they do want the regional councils to develop some sense of strategic prioritization and to support that in a way that either connects back to the cluster or connects to in-demand occupations important to the cluster that get over the medium wage threshold.

This matrix was something a lot of applicants found helpful in a number of our project sections. When we conferred with applicants, we often pointed them back to the matrix to help them try to find their point of connection with what the regional council endorsed. We’re specifically not supposed to develop a hard list of projects, but encourage creativity across the region and encourage new collaborations around these areas.

To bring more focus to the blue-sky piece, we adapted this from a framework Brookings offered, in terms of framing cluster initiatives in general. A lot of these matched up with things we talked about in the blue-sky session or with things that were directly spoken to or implied.

We talked a lot about networks of information and knowledge and awareness. I had just done a meeting with faculty at a plant at one of our advanced manufacturing firms a couple weeks ago, and there were people who were working in similar areas who hadn’t met. This was a 1:1 retail connection building. In a non-COVID environment, maybe they would have met at a RBTC event or a Lynchburg Business Alliance event.

But I think our ability to strengthen those connections and support more communication within our target sectors, to trade knowledge, awareness, and expertise, is something that is worth consideration. There are strategies around communication we could articulate; whether or not this is the right language for that is something we can all think about.

On the third column, we’ve included some examples; one of these is **VA Bio-Connect**, which we are part of funding. Another is **Virginia Offshore Wind**, a larger initiative that has GOVA money and other support. A number of us have been involved in the **Unmanned Systems local chapter**, which doesn’t have public money in it, that I’m aware of. All of these are examples of network building. They’re doing multiple things, but part of what they’re doing is building networks and improving information that will help high growth components of certain industry sectors or clusters grow.

1st column of the matrix is focused on interventions and how we can articulate some strategies for applicants to consider. We’re not looking to develop a hard list of projects but it was helpful when we did this last time to include existing and hypothetical examples.

There is some overlap in these sometimes, and we need to be careful with this, but I think it is very appropriate for the cluster group and the cluster story. We’ll need to make sure that if we say something in this section of the plan about talent that it clearly connects and adds value to what the talent group is bringing forth. Bringing focus to talent development is very much a cluster concern in the literature. We’ve talked in different settings, and certainly talent was discussed in the technology section in the previous plan. Finding ways to be customized about our talent products is something that is definitely a cluster strategy to give some thought to.

If we put talent on the table in this section, it’s important to make sure we have conferred or have crossed our knowledge streams with the other group working on talent, but it’s also important to make sure whatever we say is explicitly focused on clusters, and gives guidance and support to applicants who want to bring us ideas about talent. There are reasons to look more broadly at pipeline and STEM, but we need to make sure that we are giving them enough guidance to give us ideas focused on talent needs of our clusters.

**Some examples, out of our portfolio of GOVA Region 2 funded projects so far:**

**Enhancing the Region through New Technology for Unmanned Systems (Dabney S. Lancaster Community College):** The Alleghany Highlands drone project was with a very specific small number of employers who helped shape something that is being offered in that region. They were very engaged with the community college up there in developing and deploying the curriculum.

**Blockchain Ecosystem Catalyst:** They work in a continuing education setting. The continuing ed component was identified by the leading firms in the sector as a need.

**ELITE internship program:** This project is particularly focused on the software sector and building experiential learning opportunities that can relationally deliver some folks that we may convert from interns into full-time staff.

The Brookings piece talked both about infrastructure and place-making. If any of you have the chance to work with Joe Meredith, the former head of the Corporate Research Center, he had a whole section of his standard deck where he said ‘he wasn’t selling real estate, he was building culture.’ He was bringing folks with similar interests together and building culture and community. He spent a lot of time making that an important part of the brand of the Corporate Research Center. You can see some of that in how folks talk now about innovation districts, for example, and the benefits of proximity, in terms of awareness and knowledge sharing.

Virginia Tech Transportation Institute (VTTI) brings companies from around the globe to Blacksburg and to Virginia Tech. Some of them over the years have set up innovation cells and other things that are appropriately scaled. Imagine if we could do this in a way that was not just about a testing relationship with VTTI, but suppose it was about the Future Truck, where we had OEMS, startups, and testing resources coming together in a way that would encourage even more people to be involved.

There is constantly a need to refresh, with industry guidance, the test beds and research facilities that we have available to different types of firms in the region. We used to have the fastest supercomputer in the world in Blacksburg. That didn’t last long due to the incremental changes in building those supercomputers. It was a nice headline for a while, but it points to the fact that even as we’re trying to figure out how to deploy 5G, we’re talking about 6G. The need to constantly refresh our testing assets and also really make sure we have the appropriate access and input from industry in our clusters is important.

I’ve been talking recently with some of our food science faculty who provide a lot of testing resources to companies of all sizes around the state. We didn’t have a vehicle in place, but we may see something come forward that might bring a little more focus and engagement specifically to firms of that type in this region.

Eddie Amos: I’d love for us, as we think about the cluster exercise and as we revise the document for the state, to actually take that Joe Meredith approach and not look at Region 2 as real estate or as a set of disparate components, but think about how do all the parts come together to meet that endgame? That should be part of our driving force.

Growing up in Southside, I always looked forward to the day that the 4-H extension group came down and imparted knowledge to us. As we sit back and think about the region, we have a set of great assets – Virginia Tech, Radford, Hollins, the community colleges, and Liberty. How do we leverage those in that same type of model to get this expertise out to business and start that bi-directional exchange, whether it’s 5G, security, advanced manufacturing, transportation or energy? We have the components; how do we bring them together in this cluster to tell a better story?

John Provo: I think Joe Meredith is powerful particularly when it’s connected to data. I think we’re selling ourselves short if we don’t enhance the narrative through this exercise.

Eddie Amos: What does Carillion do? They’re a hospital, but they’re also a research institution, they have one of the leading oncology centers for animals, they’re probably one of the biggest IT big data research components in the region, they do security, and they have a lot of logistical things they have to deal with in terms of equipment. How do we share that narrative and start bringing things together?

John Provo: We talk a lot about the research assets in the region. One of our former VPs for research, Bill Knocke, said, Yes, I can talk to you about intellectual property, but don’t forget about our intellectual capital, which we have different ways to loan out.

I think making sure we can deal with the intellectual property correctly and work with the institutions to access those things is important. But there’s also a rich collaborative effort where we could bring that intellectual capital of our institutions to bear. Sometimes those things might look like manufacturing outreach activities, or they might be things that put faculty or student-led faculty teams on projects that our partners in our cluster want to undertake.

I do think finding a way to do that for regional companies is an ongoing challenge. We have a lot of university-industry collaborative partnerships but many of them do not have membership in the region. Some of that is due to the level of work being done or some of that is the cost associated. There are some examples: Virginia Tech for High Performance Manufacturing is embedded in our industrial systems and engineering group. They were one of the lead groups I took out on this visit I mentioned where some fresh connections were made, both between firms and companies.

GO Virginia, at the state-wide level, funded an agency called GENEDGE, a jointly funded activity of the federal and state governments. They’re a lot more oriented toward process and market, but it’s a different kind of assistance that helps companies in or outside of a cluster. They were looking to focus on certain manufacturing clusters with a growth potential that has been impacted to COVID.

Certainly Janice’s company has been involved in helping stand up this testing facility, which also has training components, in the county owned industrial park in Bedford. It has applicability for a couple of different industry sectors.

Eddie Amos: As a region, we have great research, but taking research and turning it into applied science is difficult sometimes. One of the better examples I saw was between a company in Botetourt and Virginia Western Community College and how they worked together. And that was more of an applied science program. Would you put them under this line or would you put them somewhere else?

John Provo: **I** think that totally makes sense. I think it’s also possible to build a throughline in certain sectors. My first exposure to Virginia Western came during the last recession, and we put together an applied research and training program with Virginia Western and Virginia Tech’s School of Building Construction, which is a very sophisticated and hands-on applied kind of group. There were wonderful synergies.

There are projects/initiatives going on in life science that are very basic, but there are also other projects that are applied and are maybe on a market track that could be delivered on.

Eddie Amos: On the research component, it’s important to let the professors know what’s available. If I’m having to sit back and do my research, I want to know what some opportunities are to test my theory, or I want to define best practices, or just come up with a new area of study. Sometimes professors may not realize what’s available in Region 2, so we have to be a storyteller in terms of what we have and what’s available.

John Provo: Ken McFadyen’s folks at Eldor certainly have some ongoing things with Virginia Western, but I know we have organized some visits from Virginia Tech for folks from three different departments. Getting those folks in the cluster conversation is important, in a way that doesn’t take away from their day jobs, same thing for industry; we don’t want the cluster thing to be burdensome, we want it to add value.

There are many doors into all of our institutions. Finding a path in is sometimes difficult. This cluster approach gives a way to make it many:many instead of 1:1. The scaling up is good for the higher education folks at the 4 or 2 year level, because you can show the scale in our lively conversations. If you can manage the frenemy nature of some of the firms in a cluster appropriately, you’re going to do something better for them too.

I think there’s some language here that could be strengthened about the industry led aspect in the section and also the applied aspect on the intervention, because I think that’s something that we can go back and look at. Wordsmithing all of this is one of our next steps.

Capital access has been a critical piece of Meredith’s life for quite a while and others, and we need to make sure there’s some coherence in how the conversation goes between what we include in the entrepreneurship section and in the cluster scale up section. Companies at all stages of growth and development have capital needs and those change and grow. You don’t want that to be a barrier to how folks in the cluster grow.

A lot of what I listed here does relate to entrepreneurial firms and we certainly have some examples in the region funded through GOVA and in our neighboring areas and groups that are focused in different ways on education about capital.

I put that Southwest one in there because a key piece of their mission statement is the idea of attracting companies and investors. They’re highly net-worked back with the mainstream crowd in Richmond from a banking and legal perspective. There are certain aspects, particularly when you think about how firms move up the life cycle, where we might encourage folks around the greater region to put some further thought to this. Like the talent one, this is where we want to make sure we figure out the specific unique piece of this we’re adding to the conversation.

We pulled some principles and practices to think about, and much like the entrepreneurship discussion, an ecosystem for clusters doesn’t happen overnight. It’s interesting to think about path development; some of the clusters we identified have a lot of small firms. Some of them have a lot of larger firms. Are we building clusters from the grassroots up or are we building clusters from the large firms down?

I mentioned the truck companies a couple of times. We have a large number of OEMs and we have small firms coming into this space as well. The opposite may be said of some of our software narratives; it’s grown from the grassroots up, and we’ve had some acquisitions bring some larger nameplates into the region. Recognize that clusters need to see all of this, but they may have a different narrative path that’s promoted their development and that’s okay.

Expect these to be industry driven, particularly for innovative and high growth components of these clusters. We should expect university and higher ed to fuel them in some fashion. At least at the start, some catalytic investments from government may be in collaboration with the private sector, like the example that Janice’s firm did with their equipment donations that kicked off the work at Liberty. That should be an expectation.

We need to do more to hone our understanding of the uniqueness of these clusters, not just their mass, not just their function, but the ‘so what’ of it all. With that understanding, we should agree on some collective bets that make sense. If we’re going to do things at a bigger scale, at a nationally and internationally competitive scale in our lifetimes, we need to do it a little more collectively, in an action sense.

Some aspect of placemaking adds value to the clusters we see around the country, whether they’re located around the incubators, or research parks, or test beds.

Meredith Hundley: There’s a lot of interrelationships between the different working groups, which is why I’ve bounced from entrepreneurship to over here. I think there’s a lot of relationship between the industry clusters that have been identified. The emerging technology and IT one is almost a building block of the different clusters. It can go into advanced manufacturing or it can go into health and life sciences. It’s this foundational piece, just like talent is foundational for any number of the clusters.

I’ve been thinking about cluster scale out vs. cluster scale up. What needs to be built out across vs. building up within a particular industry cluster? What’s necessary to have the economies of scale that we need as a region?

I’m thinking about software developers and how we see the need for those within a variety of industries across the region. All companies are tech companies in certain ways if they’re going to survive. How can we segregate them off when they are essential parts of everything that’s happening in our modern society?

John Provo: If we think about clusters, they’re almost like a blob. It’s fuzzy around the edges, and the boundaries are permeable. What I would suggest is we need to have a structure that lets industry help us shape them. Particularly what we want to talk about is their assets, their opportunities, and their challenges because ultimately GO Virginia is about growing jobs and investment. It’s important that we think about the clusters as a launching point for industry identity within our growing region. As we grow and mature as a region, I think we’re better able to articulate and build conversations. Some of our regional EDOs have had great cluster-focused working groups over the life of this plan. I love that scale-out image as well. My last suggestion would be to is don’t ever think of these as endpoints but as starting points in a journey.

Eddie Amos: Most companies have an IT component that you will leverage, whether it’s using an application that’s been developed. From the scale up perspective, aren’t there certain things we could lead in, such as cyber, 6G communications, or big data analytics, in order to build some of the foundational tools that would be used to scale out in other sectors or other industries? What do you think about that?

Meredith Hundley: You scale up when something is emerging and once it has emerged, it goes out. Looking at ransomware attacks, if cybersecurity is not at a table, then you’re going to be left behind. It needs to scale up within its own particular area to develop expertise there. But then that expertise needs to be spread out across different industries. The emerging technologies almost become part of the other industry clusters, once it has emerged.

John Provo: Why government funded? If it doesn’t exist already, catalytic investments, particularly for a rural underdeveloped area, can give an opportunity for voice. If I’m going to go to a company and ask them to take time in a collective exercise, that public good has to be represented in some catalytic way. Some of that can be me setting a table for conversation, but if I’m setting a table for conversation about a new training program that meets the needs for three or four companies, it’s going to catalyze faster.

Jason Schwartz: The Brookings paper talked about how the government funding brings credibility and fills in the gaps, especially for companies in early startup stages, and for various tax incentives and land development. It’s really key to get that government funding, from both local and state, and using that to even pull in federal funds. Especially for site development – that’s really impactful.

John Provo:When we think about **next steps**, we’ve taken some notes and you’ve given us some feedback to help us refine the components of the table here, but **it’s very clear that we need to make sure we refine the strategy areas by cluster**. The clusters are starting points, and the strategies and interventions are starting points. Some of the groups have already done workshops and studies and we’ll use this strategy document to help ask better questions of some of those folks who have roundtabled with our industry partners. This is something we need to spend a little more time on. Refining the strategy areas by cluster is one of the top things, from a staff perspective, we’ll need to work on.

Stephen Diesel: I think one of the biggest things that would help for any of these clusters is identifying some of the leaders and performing some user interviews with them: understanding what their needs and obstacles are, identifying any patterns, such as a skill set gap we need to reinforce or a manufacturing gap.

John Provo: We’ve got to match up where our information gaps are. I think I’ve got better insights for some rather than others. There are some existing industry workgroups, whether it’s under the EDOs, or chambers, or tech councils. I’d love to find a way to refine that on an ongoing basis and maybe that’s another piece of this. I think we have the opportunity to amend and refine our direction even once the plan is up, as well as the idea of how we present the RFP itself. That’s something we update with the council on a regular basis. We’ve done gap analysis before with them to see what types of projects to focus on moving forward.

**Everyone is invited to our series of regional roll-out meetings in the beginning of October (dates below).**

**GO Virginia Region 2 Growth and Diversification Plan Regional Meetings**

**October 4, 2021:** Roanoke-Alleghany Regional Meeting, 3:30-5 PM, Room 212 at the Roanoke Higher Education Center, 108 N Jefferson St, Roanoke, VA 24016
Register in advance for this webinar: <https://virginiatech.zoom.us/webinar/register/WN_XpwkdAHaSRyn8QPwsf4nhQ>

**October 5, 2021:** Lynchburg Regional Meeting, 12:00-1:30 PM, Room 108 at the Liberty Mountain Conference Center, 3700 Candlers Mountain Rd, Lynchburg, VA 24502
Register in advance for this webinar:
<https://virginiatech.zoom.us/webinar/register/WN__kolZuINRxen2VYMxyAcRA>

**October 7, 2021:** New River Valley Regional Meeting, 3:30-5:00 PM, Concept Room, Suite 2018, in the Virginia Tech Corporate Research Center, 1880 Pratt Dr, Blacksburg, VA 24060
Register in advance for this webinar: <https://virginiatech.zoom.us/webinar/register/WN_fDc3aSwRTVC41nwSHvukZA>

These meetings will take a look at the whole document. You will see the workgroup pieces and a draft form of the G&D plan plugged in with the additional front matter we’ve talked about in the kick-off meeting. These will be hybrid activities, with in-person and Zoom options. We’ll have some council members there and a whole document to run through. These meetings are meant to give us geographic feedback on the plan as presented. These clusters generally have some play across all three regions, but I think the emphasis and priorities will be a little different. I hope everyone will participate in that.

We’re also planning on getting a working draft of the G&D plan open for asynchronous comments from everybody who’s interested.

We have two public meetings to consider the draft, an executive committee meeting and a full council meeting **(dates below).**

**October 21, 2021:** GO Virginia Region 2 Executive Committee Meeting, 1-3 PM, Room 709 at the Roanoke Higher Education Center, 108 N Jefferson St, Roanoke, VA 24016

**October 27, 2021:** GO Virginia Region 2 Full Council Meeting, 1-3 PM, at the Shenandoah Room of The Hotel Roanoke, 110 Shenandoah Ave NE, Roanoke, Virginia 24016

**Homework: Who are five champions you would identify in each of the clusters?**