Industrial Hemp Industry Development Work Group

August 25, 2020 – 2:30 to 4:00 p.m.

Hosted by VDACS

2:30	Call meeting to order, welcome, brief background and participant introduction
2:40	Review and approval of draft minutes from July 14 and July 28
2:45	Presentation: Industrial Hemp Industry Development Work Group Review of Findings
3:00	Guided discussion of initial findings and solicitation of feedback
3:20	Final comments, detail next steps
3:30	Public comment period
4:00	Adjourn

PUBLIC PARTICIPATION

Members of the public may listen to the meeting via the Cisco WebEx platform using the link, access code, and password below.

Event address for attendee:
https://covaconf.webex.com/covaconf/onstage/g.php?MTID=e9f33eccb111f0ed690fefb0a6928b6e3
Event number (access code): 171 833 0467
Event password: hPSZfN8XS69

To join the audio conference only:
Call the number below and enter the access code.
US Toll (517) 466-2023
US Toll Free (866) 692-4530

If you would like to comment during the public comment portion of the meeting, please sign up to do so using the WebEx Q&A feature. Via the Q&A feature, send the Meeting Host your first and last name as well as the name of the organization, if any, on whose behalf you will be commenting (e.g., Joe Smith with ABC Organization). If you join the meeting using the audio conference only or are unable to locate the WebEx Q&A feature to sign up for the public comment portion of the meeting, please email your first and last name as well as the name of the organization, if any, on whose behalf you will be commenting to Erin.Williams@vdacs.virginia.gov. During the public comment portion of the meeting, the Meeting Host will unmute your microphone and announce that it is your turn to comment. Please minimize the background noise at your location.

Should any interruption of the broadcast of this meeting occur, please call 804-363-9201 or email Erin.Williams@vdacs.virginia.gov to notify the agency. Any interruption in the broadcast of the meeting shall result in the suspension of action at the meeting until repairs are made and public access is restored.

DRAFT MINUTES

Tuesday, July 14, 2020

The meeting of the Industrial Hemp Industry Development Work Group convened at approximately 2:30 p.m. on Tuesday, July 14, 2020. The meeting was held by electronic communications means due to the state of emergency issued by Governor Northam as a result of the novel coronavirus (COVID-19). The meeting was issued using Cisco Webex Events. Stephen Versen called the meeting to order.

WORK GROUP MEMBERS PRESENT

Robert Mills, Pittsylvania County farmer
Sandy Ratliff, Virginia Community Capital
Lindsay Barker, Virginia Economic Development Partnership
Christy Morton, Virginia Economic Development Partnership
Robert Spiers, Dinwiddie County farmer, Tobacco Commission
Felix Schapiro, Workforce Policy Analyst, Governor's Office
Gayle Barts, Pittsylvania County farmer, Tobacco Commission
Ryan Turman, Industrial Hemp Farmer

WORK GROUP MEMBERS ABSENT

Delegate Lashrecse Aird, 63rd district, Tobacco Commission
Delegate Sam Rasoul, 11th district

PRESENTERS

Erin Williams, VDACS
Eric Steenstra, Vote Hemp

STAFF PRESENT:

Emily Flippo, VDACS
Erin Williams, VDACS
Kevin Schmidt, VDACS
Stephen Versen, VDACS

APPROVAL OF MINUTES (to be voted on at Aug. 25 meeting)

NAME moved that the draft minutes of the meeting on July 14, 2020, be approved as distributed. NAME seconded the motion. The motion was approved by a unanimous roll call vote.

APPROVE: NAMES

OPPOSE: None

- Chapter 745 of 2020 General Assembly directed VDACS to develop working group to assess the benefits of the industrial hemp industry. This is the first of three meetings.

- The goal of this meeting is to educate participants of where the industry currently stands, where it's going, and where the most promising opportunities for development of the industry in Virginia lie.
- During the next meeting the group will discuss our current understanding of markets for hemp and hemp products and the value that these markets will provide to our communities. explore economic development strategies to further develop the industry through lead generation, site selection, workforce development and training. Final meeting will discuss findings from first and second meetings.
- **Erin Williams, who directs VDACS' hemp program, provided an overview of the hemp industry. Erin discussed the following:**
    - Differences between industrial hemp and marijuana
    - Different varieties of industrial hemp (fiber v. floral)
    - CBD uses and products
    - 2018 Farm Bill
    - Virginia Industrial Hemp Law (Grower, Processor and Dealer Registrations)
    - Virginia Criminal Code and Drug Control Act
    - Food safety practices for industrial hemp processors
- As of July 11, 2020:
    - 1,291 active Industrial Hemp Grower Registrations
    - 360 active Industrial Hemp Processor Registrations (11 currently under Food Safety inspection and in operation)
    - 234 active Industrial Hemp Dealer Registrations
    - 9,093 acres planned for hemp in 2020
- Felix Schapiro asked if, in states where marijuana has been legalized, does a farmer's interest in growing industrial hemp persist? In Colorado, where there are both hemp and recreational programs, the state boasts one of the largest hemp programs in the U.S. There's no ability to cross over between the two programs; once you're in the hemp program, you're bound to staying in that program and comply with the THC limitations.
- **Eric Steenstra (President, Vote Hemp) provided an overview of the hemp industry and existing challenges. Eric discussed the following:**
    - Vote Hemp background
    - History of growing hemp in Virginia in early 20th century
    - Establishment of mandates in the 2018 Farm Bill to regulate industrial hemp – expect more rules to develop following this year's harvest
    - Significant growth between 2018 and 2019 – jumped from around 25,000 acres to over 78,000 acres of hemp grown in 23 states.
    - In 2019:
        - 40 universities conducted research
        - 3,546 state licenses were issued
        - 511,000 acres were licensed
        - 450% increase over 2018
        - Most producers had no contract and were unable to sell crop

    - FDA regulation of hemp extracts under existing food, drug and supplements – specifically concerned about dietary supplements and other health claims from CBD processors.
    - The largest area for growth in the industry is through hemp seed – eventually, once large food companies are more comfortable using hemp seed in its products, it'll surpass current acreage being grown for flowers (CBD)
    - Challenges ahead:
        - Definition of hemp is overly restrictive – need to increase to 1% THC definition
        - Banking access is still seriously limited, similar to cannabis market
        - Sale and marketing of hemp-derived products is limited on various platforms including Amazon and Facebook
        - While the 2018 Farm Bill legalized interstate transportation of hemp, many states didn't get the memo and continue to police
        - Individual state bans of hemp CBD product sales and patchwork regulation
        - FDA failure to provide guidance creates confusion hurting industry
        - Lack of processing infrastructure
        - Seed certification and development of new compliant genetics.
    - What does the industry need for success:
        - Hemp genetics to meet the new 1% THC threshold
        - Reasonable and accurate sampling and testing regulations from USDA
        - Crop insurance – only available in select states
        - Investments in hemp processing to provide a path to market for farmers
        - Updated state legislation to be ready for 2018 Farm Bill programs
        - Regulatory certainty and guidance from FDA
        - Formal banking guidance from Treasury Department
        - Interstate transportation guidance
- Sandy Ratliff asked why the future of industrial hemp will be more surrounding fiber and seed – Why? In 2018, hempseed oil, hemp hearts and protein powder received GRAS status (Generally Recognized As Safe) – eventually companies like Kellogg, Nestle, etc. will start to use this ingredient once its more widely accepted/grown/available. It's very comparable to soy but has higher nutritional value and better flavor profile. Will also be supportive of the growing plant-based diet trends. The fiber-side of the industry will continue to grow as more research is conducted for a variety of applications aside from animal bedding and textiles.
- Ryan Turman stated that in October, USDA will include THCA with THC – will Virginia follow suit? There is some flexibility that could exist within the USDA guidelines. Some changes that need to be made include:
    - Need to test the whole plant, not just the top where there's a stronger level of THC
    - Need to include "measurement of uncertainty" when you're sampling one plant from an entire acre and assuming that the remainder of the plants have the same THC/THCA levels
- Does the THC content of the hemp plant have any structural impact on the integrity of the fiber or its utility as an industrial product? The variety of industrial hemp grown for cannabinoids is different than the plant grown for fiber. The THC level will likely not impact the quality of the fiber.

- Stephen Versen asked about how we can learn from Canada's industrial hemp industry – how much of an analog is Canada's experience for the U.S. and what does it mean for the industry in Virginia? The number one difference for Canada is that they were only allowing hemp to be grown for seeds or fiber, no production of cannabinoids until this year (they're behind us in VA). Most of the acreage in Canada has been grown for the grain, and they've developed a good market. They have struggled with fiber processing there, likely due to a lack of investment, but all pilot projects as of now have failed. To be successful, there needs to be a strategically located processing facility because fiber transport is so expensive.
- Sandy Ratliff asked about processing of the variety of products. Could one processing plant handle all of the different types of hemp processing? All of the different production lines could be in the same building, but each requires its own sorts of equipment. The most important aspect would be proximity to growers since transport of fiber in particular is so expensive. A cohesive production facility for seed and fiber would make sense because you could harvest the plant for seeds but could then process the stalk for the fiber.
- Christy Morton asked further about Canada's experience with the industry – are there any other good examples of states or countries that we should be looking at for best practices where we can learn some lessons about our development in Virginia? China definitely has more of the textile hemp production, but the Europeans have a significant fiber processing as well in France, Netherlands, and others. Europeans have focused more on the industrial markets than the textile markets. The technology for processing this fiber is largely 100-year-old technology – there's a need to apply science to modernize fiber processing. Virginia is well positioned to be a leader in research.
- Stephen Versen asked about where opportunities for development in the industry might be – is there a consensus about the future of this industry and, as it grows, where might we expect to see additional investment and growth? The research side is very significant – Virginia Tech is involved using funding through USDA NIFA. It's important to be supportive of research/companies looking to modernize technology of processing.
- Robert Spiers made a suggestion about banking – as far as getting financial support, because hemp isn't a traditional commodity, bankers are less likely to finance your project. To be a buyer, all you have to do is get a license through VDACS. If a grower goes to a bank with a contract, but the financial institution doesn't know anything about that buyer, they're less likely to support the project. Need to work with banks to be more supportive of the industry, specifically on the growing side. There needs to be some mechanism that demonstrates worthiness of those grower-buyer contracts.
- **The group presented remarks on industry concerns and how things could be made better through federal and state requirements.**
- Robert Spiers said that a lot of thought needs to go into methods for sampling. If the plant is close to 0.3%, by the time it's processed, it is far below. It is hard to get the CBD oil content up without surpassing the THC threshold. Industry is not profitable with lower CBD content. Also – might need to better regulate who is allowed to register as a buyer, need to require additional information from buyer applicants.
- Stephen Versen asked if there is a role that state governments might play (similar to VA grain laws for grading/weighing/honoring purchases) for hemp growers? Does Canada have something similar in place? There is a federal program under USDA called PACA (Perishable

Agricultural Commodities Act) and there is discussion about having hemp be included in PACA. This allows you to see who the different players are in the industry and to establish credibility for a buyer. Offers more protection for producers.

- Robert Spiers asked if any states or various programs consider sampling in a bonded warehouse, graded on a standardized test and then sold by grade, similar to the cotton industry? It seems like each different processor has their own standard, so it might be a good opportunity to create grading standards and have dealers participate in the development of that scale.
- Stephen Versen presented the two recent investments in Virginia's hemp industry, Appalachian Biomass Processing (Wythe County) and Blue Ribbon Extraction (Halifax County). What have some of the recent announcements been in other states and what do you expect to see more of? Most of the investment so far have been in processing for CBD extraction, especially in Kentucky, Colorado and Oregon, who are the leaders in amounts of those types of facility. There is another significant fiber processing project in Montana, others in Texas and Pennsylvania. Seed processing has taken off in places where there was an existing oil seed processing infrastructure – there is a significant cluster in North Dakota. Oil seed processing would be a good opportunity for Virginia.
- Robert Mills said that the growers in Southside VA have been primarily interested in growing for CBD because it uses the same infrastructure and growing mechanisms as tobacco. Blue Ribbon Extraction contracted for over a million pounds of dried flowers. Another company has come in and has contracted with him for 125 acres for use in medical industry. The biggest obstacle as a grower is the 0.3% THC threshold – the plant can't reach its CBD potential. The threshold needs to be adjusted to 0.6% THC, which allows CBD to reach the 13-16% level required to be profitable. The other major obstacle is the current protocols in place for sampling, as mentioned previously during this meeting.
- Stephen Versen asked about supply chain requirements for the industry. Robert Mills said that the most important detail is that processors locate strategically between growers. Blue Ribbon Extraction chose Halifax County because the location is within 50 miles of all of their contract growers. Industrial hemp is an ideal opportunity for manufacturing companies to locate in rural areas, because proximity to growers is key.
- Eric Steensra made closing comments about where the industry might be headed next. Over the last 30-40 years, we've seen the textile industry disappear in favor of cheap labor elsewhere. With some research and development of new technology, industrial hemp fiber could be a key in reshoring the textile business. There are several American manufacturers experimenting with hemp fibers and yarns. Need to look at Virginia industries to figure out how this material might fit in with businesses that are already here.
- Christy Morton suggested that the group uncover more information about the businesses that are already successfully operating in the hemp industry, particularly as it relates to reshoring of businesses due to COVID-19. From a traditional economic development standpoint, one of the ways we could incentivize growth in the industry is continuing to develop appropriate industrial sites in rural areas in close proximity to growers. If there is any information available about the different companies operating in the flower/fiber/grain spheres, it would be beneficial to send to the rest of the group.
- Sandy Ratliff suggested that VEDP might be able to approach growers and processors to evaluate how to better support the existing industry prior to recruiting new business.

- **Stephen Versen opened the meeting for public comment.**
- Mike from the Tobacco Region Revitalization Commission asked about how growing different varieties of hemp within a certain proximity can affect the crop. Robert Mills said that growing hemp for flowers in proximity to hemp for fiber does present an issue because of potential for cross-pollination. It's important to be in communication with your neighbor growers and plan accordingly.
- The next meeting will be held in two weeks on July 28.

The meeting was adjourned at 4:45pm

DRAFT MINUTES

Tuesday, July 28, 2020

The meeting of the Industrial Hemp Industry Development Work Group convened at approximately 2:30 p.m. on Tuesday, July 28, 2020. The meeting was held by electronic communications means due to the state of emergency issued by Governor Northam as a result of the novel coronavirus (COVID-19). The meeting was issued using Cisco Webex Events. Stephen Versen called the meeting to order.

WORK GROUP MEMBERS PRESENT

Robert Mills, Pittsylvania County farmer
Sandy Ratliff, Virginia Community Capital
Lindsay Barker, Virginia Economic Development Partnership
Christy Morton, Virginia Economic Development Partnership
Robert Spiers, Dinwiddie County farmer, Tobacco Commission
Felix Schapiro, Workforce Policy Analyst, Governor's Office
Delegate Lashrecse Aird, 63rd district, Tobacco Commission
Delegate Sam Rasoul, 11th district
Gayle Barts, Pittsylvania County farmer, Tobacco Commission

WORK GROUP MEMBERS ABSENT

Ryan Turman, Industrial Hemp Farmer

PRESENTERS

Rick Gregory, CoFounder, Golden Piedmont Labs
Christopher and Susan Moore, Founders, Appalachian Biomass Processing
Michaela Martin, Virginia Economic Development Partnership

STAFF PRESENT:

Emily Flippo, VDACS
Erin Williams, VDACS
Kevin Schmidt, VDACS
Stephen Versen, VDACS

APPROVAL OF MINUTES (to be voted on at Aug. 25 meeting)

NAME moved that the draft minutes of the meeting on July 14, 2020, be approved as distributed. NAME seconded the motion. The motion was approved by a unanimous roll call vote.

APPROVE: NAMES

OPPOSE: None

Stephen Versen presented the SWOT analysis compiled from discussions during the first meeting of the working group.

Strengths:

- Research opportunities and progress at VT and other higher education centers
- Similarity to tobacco industry practices
- General enthusiasm for new industry from growers and consumers

Weaknesses:

- Need more efficient method for fiber processing
- Lack of guidance from FDA/legal discrepancies between states
- Lack of processing infrastructure
- Virginia is not recognized as a grower and producer of quality hemp – we are in need of a comprehensive marketing plan

Opportunities:

- New processors getting started in VA (hemp fiber and CBD)
- Potential for hemp seed processing in the future
- Economic development opportunity well-suited for rural Virginia
- COVID-19 could open up potential to grow industry as an anti-inflammatory for patients
- Virginia has an extensive knowledge of the textile industry that could translate into opportunities for hemp fiber

Threats:

- Current THC regulation is too low for the industry to be profitable
- Limited support from banks
- Crop insurance is limited; the only available program is unaffordable
- Unreasonable sampling/testing regulations

Rick Gregory presented on his experience in establishing Blue Ribbon Extraction, the Commonwealth's first, commercial-scale CBD extraction facility, located in South Boston.

Mr. Gregory discussed:

- $2.6 million building renovation for food-grade CBD processing facility with state-of-the-art extraction equipment
- Site selection process; benefits of locating in Halifax County
- Health and safety concerns of CBD processing in spite of limited federal regulation
- Importance of strong relationships with growers with transparent purchase agreements
    - Split-contract agreements with growers (flat-rate purchase price for raw materials, grower and processor split crude oil sale revenue 50/50)
    - Education program who work with growers to select appropriate plant varieties, best practices for maximizing CBD levels without exceeding THC threshold

- Currently are producing a crude product that is sold to manufacturers of consumer products (cosmetics, hemp cigarettes, etc.). In the future, once there is more guidance from the FDA, the company might introduce its own line of consumer products.

Stephen Versen asked about specific site and labor needs for the industry. Blue Ribbon Extraction will employ one plant manager and 21 chemists. The most important aspect of selecting a location is proximity to growers.

Sandy Ratliff asked if there are any specific utility requirements for this sort of processing facility. The amount of power required is easily acquired from Dominion, uses limited quantities of water and no natural gas. The company does use a sizeable amount of nitrogen.

Robert Spiers asked if the company provides storage for the hemp growers. Growers deliver hemp to the receiving station in Danville where it is further graded. Samples are sent to testing areas and the remainder of plants are stored in the receiving station.

Robert Spiers asked if there is a market for the THC that is extracted from the product. Hopefully the General Assembly will allow for this in the future.

Felix Schapiro asked if infrastructure needed to process THC is the same as the equipment used to process CBD. Yes, the equipment would be the same – the company already extracts the THC but is a by-product, there's no market at this time.

Susan and Christopher Moore presented on their experience in growing industrial hemp for fiber and establishing a hemp fiber processing business, Appalachian Biomass Processing in Wythe County.

The Moore's discussed:

- Background of growing industrial hemp for medicinal research purposes with UVA beginning in 2018
- An overview of their farming and processing practices, challenges and successes they have encountered.
- Challenges include:
    - Farmers are afraid to grow because of lack of processing infrastructure
    - No American origin cultivars of hemp
    - Limited financial support
    - Transportation expenses
- Successes include:
    - Crop experience with Ukraine, Poland and Chinese suppliers
    - Controlled costs because of limited funds
    - Created reproducible model for processing equipment
    - Improving quality of end product
    - Decreasing manual labor needs
- Hemp fiber products, markets and utilization: hurd and bast fiber
- Hemp Fiber SWOT analysis:
    - Strengths:

        - Agriculture principle
        - Renewable fiber
        - Renewable energy
        - Resilient crop
        - No abuse potential (THC content issues)
    - Weaknesses:
        - Little experience
        - Trial and error method
        - Financial support
        - Bad reputation
    - Opportunities:
        - Supplemental income
        - Market is ripe
        - Industrial Jobs
        - International trade
        - Protects environment
    - Threats:
        - International Trade
        - Exhaust Finances
        - Regional Support
        - Market does not wait for supply chain

Sandy Ratliff asked if the company supplies the seeds to farmers if they have the acreage/equipment? Goal is to help sponsor start-up fiber farmers to ease the early expense of seed. The company has been working with partner growers in Ukraine to get an affordable seed, which is roughly $250/acres (less than alfalfa and corn).

Christy Morton asked if there are any recommendations for the state to strengthen the fiber supply chain from beginning to end. To further grow the industry, it's important to make a decordicator more widely available. This step in the process is the current "bottle neck." The company purchased a decordicator from Canada, but the quality of the end product wasn't satisfactory. Therefore, they've made changes to the machine and rebuilt to their satisfaction in a way that can be easily replicated.

Michaela Martin presented on VEDP's approach to economic development and how the resources they provide can help grow the industrial hemp industry.

Michaela discussed:

- VEDP's principal role in economic development across the state:
    - Business Development
    - Product Development
    - International trade
    - Talent solutions
- Partnerships with other state agencies, local governments, federal agencies and higher education institutions

- Sector-focused approach starting with research and lead generation outreach to alignment with local economic development partners for site development support.
- VEDP's current approach to Industrial Hemp:
    - Part of the Food & Beverage/Life Sciences/Advanced materials target sectors
    - Call trips to targeted growth companies
    - Marketing trips including Industrial Hemp Summit
    - Collateral/Marketing materials

Christy Morton suggested that it would be helpful to identify what the industry needs are to be successful, which needs are already available in Virginia, what we may be missing and how the Commonwealth can make policy changes and outreach strategies to meet those specific needs.

Stephen asked the presenters if there were any additional needs for the industry that hasn't been discussed:

Felix Schapiro said that many of the challenges that have been discussed today are similar to the challenges that have been faced in the illegal marijuana industry and ultimately will be faced in the legal marijuana industry.

Sandy Ratliff asked if this industry is active year-round or if it's only for a few months after harvest. Susan Moore said that the fiber industry is active year-round because the bales of fiber can be stored indefinitely without impacting the plant structure. Provided that there's enough supply, the processing can run multiple shifts per day for the full year. Rick Gregory said that the CBD process is much more labor intensive that fiber processing. Migrant workers who come to harvest tobacco in early spring would stay to harvest hemp in fall. Once the crop is harvested, the CBD content in the plant will drop .75% per month. It will take about 10-months to process the CBD, but can stop the degradation of CBD using nitrogen.

Stephen Versen opened the meeting for public comment. There were no comments.

The meeting was adjourned at 4:38pm

Report from the Industrial Hemp Industry Development Work Group
DRAFT

Background

Since Congress authorized state departments of agriculture to grow industrial hemp for research purposes, under certain conditions in 2014, there has been considerable interest in the crop with many seeing an opportunity for the creation of an entirely new industry in US. Virginia has also experienced substantial interest in the crop, not only from those interested in growing the crop, but also those interested in creating new businesses to process the crop and from communities, particularly in rural areas, who see the growing and processing of the crop as an important new economic development opportunity in areas sorely in need of one.

- **Info on hemp growth in Va (registration #s)**

As of July 11, 2020, there are 1,291 active industrial hemp grower registrations, 360 active industrial hemp processor registrations – 11 of which are currently operating under VDACS Food Safety inspection—and 234 active industrial hemp dealer registrations. According to industrial hemp grower applications, there are 9,093 acres planned for industrial hemp for the 2020 growing season. This is a continuation of substantial annual increases in the acreage of industrial hemp planted in Virginia, growing from 135 acres in 2018 and 2,200 in 2019. Another sign of the tremendous interest in the crop has been the formation and success of the Industrial Hemp Summit hosted annually at the Institute for Advanced Learning and Research in Danville. The event is a multi-stakeholder collaboration focused on building the industrial hemp industry in America. The 2020 summit sold out for the third consecutive year with 400 attendees from 25 states.

- **Econ Dev Projects**

Since the General Assembly passed the Virginia Industrial Hemp Law in 2019, there have been two Governor's incentives awarded to industrial hemp processing companies, with several more projects at various stages of development. In addition to creating new jobs and tax revenues for the communities in which they locate, these facilities play a crucial role in the development of the industry in Virginia by creating local markets for Virginia growers.

Appalachian Biomass Processing, announced in October 2019, is a value-added processor of industrial hemp fiber in Wythe County. The company uses customized decordicator machinery to break down hemp stalk into hurd and bast fiber, which are sold to textile manufacturers in North Carolina and for use in animal bedding. This project represented $894,000 of capital expenditure, 13 new jobs paying an average wage of $39,098, which is above the local average, and an estimated $1,053,125 purchase of Virginia-grown industrial hemp, approximately 6,025 tons, over the next three years. The founder of the company, Susan Moore, has been a leader in Virginia's hemp industry for several years and has served as a valuable resource for entrepreneurs interested in growing and processing industrial hemp across the Commonwealth.

Golden Piedmont Labs, announced in June 2020, is a food-grade cannabidiol (CBD) extraction facility in Halifax County. The company contracts with industrial hemp farmers within a 50-mile radius to source dried, CBD-derived hemp flowers. The majority of such farmers have a history of growing, drying and curing tobacco, which requires the same infrastructure as this variety of industrial hemp. Golden Piedmont Labs will extract CBD from the plant to produce crude oil and will sell the oil to a secondary manufacturer of consumer products including supplements and cosmetics. This project represented

$3.36 million of capital expenditure, 22 new jobs paying an average wage of $47, 891, which is above the local average, and an estimated $71,675,123 purchase of Virginia-grown industrial hemp, approximately 3,079,415 pounds, over the next three years. The founders of Golden Piedmont Labs are native to Halifax County and established the company in an effort to bring new job and market opportunities to local tobacco farmers.

- **Interest in seizing opportunity of new industry**

As demonstrated by the overwhelming number of industrial hemp grower, processor and dealer applications, in addition to the estimated number of acres to be planted in 2020, Virginia's farmers and entrepreneurs have a vested interest in and enthusiasm for industrial hemp opportunities. As dictated by growers who participated in the working group, the Commonwealth could capitalize on that enthusiasm to create high-paying jobs and substantial capital investment in a number of ways, including through reconsideration of existing regulations on sampling and Tetrahydrocannabinol (THC) content and superior marketing of Virginia as a producer of quality industrial hemp. Many rural localities have made recruiting and supporting new hemp processing companies a priority for their economic development efforts. In addition to the traditional benefits of jobs, tax revenue and overall economic vitality, many localities are aggressively recruiting new companies as they see an opportunity to position themselves as leaders in this new and fast growing industry, with the hopes of bringing in additional related development.

Assessing the opportunities for development and manufacturing in the industrial hemp industry

When assessing the opportunities for development and manufacturing in the industrial hemp industry, it is helpful to consider each of three major uses or products of the crop. This is because each is distinct in how it is grown, harvested, processed and used. The three major categories of industrial hemp use are: fiber, CBD and seed.

- **Hemp Fiber**
    - Growing/Product/Markets
    - Manufacturing opportunities
    - Virginia's value proposition
    - Key challenges

When industrial hemp is grown for fiber, special varieties are planted that generally produce taller, thicker stalks that seek to maximize the two primary outputs of the crop: hurd and bast fiber, which are mechanically harvested and separated post-harvest by specialized equipment known as a decordicator. Hurd, the plant's woody core, is currently most often used in Virginia for animal bedding, but has multiple other applications such as an absorbent for environmental remediation applications and paper making. Bast fiber are the long, extremely strong fibers that have traditionally been used to make rope. The material is also used in industrial applications to make fiberboard, hempcrete or used by fiber companies that degum and "cottonize" the fiber for use in textiles.

There are no large scale hemp fiber processers in the United States; therefore, most users of hemp fiber and hurd rely on imports. However, it is expected that industry demand for hemp fiber will continue to grow as research is conducted to develop more efficient processing and viable commercial applications aside from the current limited markets that include animal bedding and textiles. Although a modern

hemp fiber industry has been operating in Canada, China and Europe, an opportunity for a successful US industry exists as limited worldwide demand for hemp fibers products have kept these countries from developing an overwhelming technological advantage. Additionally, because hemp fiber is, among all the hemp crops, the heaviest, bulkiest, lowest value and therefore most costly to transport, it is, as a raw commodity, the least susceptible to competition from imports. Virginia has a good climate for hemp fiber production, good markets for animal bedding, and because of the state and region's history as a leader in the textile industry and the presences of premier agriculture research centers at Virginia Tech and other higher education institutions, there is opportunity for innovation that could create important new markets for hemp fiber products. Lastly, the success Appalachian Biomass Processing has had in creating an efficient, automated processing facility, could give Virginia important "first mover" status in this fast growing industry.

Production of industrial hemp for fiber is substantially more affordable than for CBD; however, fiber-derived products currently have lower market value than CBD products. Challenges for production include a dearth of cultivars optimized for the regions' climate. Current growers have had positive experiences purchasing seed from suppliers in Ukraine, Poland and China despite international shipping issues, specifically since the eruption of COVID-19. The Commonwealth currently only has one industrial hemp fiber processor, which may make some farmers hesitant to grow due to lack of processing infrastructure and fear of being able to successfully market their product. Additionally, the fact that the hemp fiber industry has been operating for decades outside the US and still is relatively small and undeveloped cast doubt on when and if significant industrial scale demand for the products materialize.

CBD

- Growing/Product/Markets
- Manufacturing opportunities
- Virginia's value proposition
- Key challenges

Industrial hemp plants grown for CBD oil production focus on growing large, resinous flowers or buds that contain high levels of the oils and terpenes from which CBD crude oil is extracted. Growing and harvesting these hemp flowers is a labor-intensive process that uses much of the same equipment, facilities and labor that is used for tobacco production. The majority of CBD-derived industrial hemp is processed at an extraction facility to produce crude oil, which can be further refined into a wide variety of consumer products including supplements, cosmetics, pain relievers and hemp cigarettes. This is currently the largest industry segment for industrial hemp in the United States.

The high market value of CBD oil and the production similarities between it and marijuana mean that processing technologies are relatively advanced and continue to see continued improvement. Many producers of CBD oil are currently or are considering adding additional processing capacity so they can produce further refined CBD oil products. The recent announcement by Golden Piedmont Labs, LLC, as well as the presence of several other smaller CBD oil processors in Virginia, demonstrate an interest by the private sector to provide processing services to this industry.

Virginia's history as a top producer of tobacco positions the state to be a leader in the CBD industry. The labor and equipment needed for planting, harvesting and drying of industrial hemp match that of the infrastructure and labor requirements as tobacco production. Additionally, Virginia's strong food and

beverage manufacturing industry presence, including its robust supply chain and business ecosystem, benefit local CBD oil producers selling into that market, which many see as the future driver of demand.

Because CBD oil is so valuable, typically priced at well over $1,000 per pound, and its production costs largely driven by labor, domestic production is especially vulnerable to imports. Also, as the production and processing of hemp fiber and seed increase, technologies allowing the efficient extraction of CDB from the by-products of that industry could also lead to a flood of inexpensive product in the market. Work group members shared that additional challenges to CBD growers include THC content regulation and current sampling practices. Industrial hemp legislation currently mandates that industrial hemp plants have a maximum THC content of 0.3 percent, which, according to growers who participated in the working group, prohibits the plant from reaching highest CBD potential. If the threshold were increased to 0.6 percent THC, the CBD content would reach the 13-16 percent level required to be profitable. It is also important to consider that if a plant is harvested at 0.3 percent THC, after it is dried and processed, the THC content is far below that threshold. A final obstacle to the industry is lack of support from banking institutions and limited access to crop insurance.

- **Hemp seed**
    - Growing/Product/Markets
    - Manufacturing opportunities
    - Virginia's value proposition
    - Key challenges

The production of hemp seed or grain relies on mechanized farming equipment like that used for row crops. Cultivars used for hemp seed production produce tall plants with an abundance of seeds. Advocates for industrial hemp estimate that industrial hemp grown for hemp seed will have the most impact on the industry. Hemp seed-derived products including hempseed oil, hemp hearts and protein powder recently received a "Generally Regarded As Safe" (GRAS) designation. Ultimately, it is expected that large food companies such as Kellogg, Nestle and General Mills will use this as an alternative to soy in its products because of its higher nutritional value, better flavor profile and growing plant-based diet trends.

The majority of production in North America is taking place in Canada and the Northern Plains states where oil seed production is already well established. The handling, processing and storage of the seed relies on facilities like those used for other agricultural commodities.

Virginia's strength in the Food and Beverage Industry could lead to strong local demand for hemp seed and our higher education centers, such as Virginia Tech, could provide valuable assistance to those around the state interested in growing the crop.

As perhaps the most established and accepted industrial hemp product in the United States, much of the supply chain for the crop is already established and favors parts of the country already well suited for oil seed production, which is not Virginia.

Header: Summary of areas for consideration

(i) federal and state requirements;

A challenge faced in each of the three industrial hemp markets – fiber, CBD and hemp seed—is the lack of federal guidance and regulation, particularly as it pertains to food-grade products. This is a barrier of entry to the market for processors who hesitate to invest money in a facility that may ultimately fail future federal building inspection requirements. Other companies, such as Golden Piedmont Labs, spent additional capital to establish a food-grade extraction facility per VDACS' guidelines but has decided against producing consumer products until further guidance is provided by the FDA.

Because of the lack of federal regulation, there are substantial discrepancies between states' industrial hemp programs. In order to compete as a leader in the industrial hemp industry until there is further guidance from the federal government, members of the working group recommend that the Commonwealth consider increasing the THC threshold to 0.6 percent. This will make the industry more profitable for growers of the CBD variety in particular, will make testing and sampling protocols more reasonable, and will ultimately drive additional processors to establish facilities in rural Virginia.

(ii) key drivers and challenges;

Virginia is well-suited to advance in the industry because of the research facilities at higher education institutions across the state. Technological advancements for processing equipment and new applications for end products will help expand markets for fiber, CBD and hemp seed products. Partnerships with such research facilities is a positive value-proposition for new processors and other players in the supply chain to locate in Virginia.

The key drivers for growing the industrial hemp industry in Virginia is the presence of stable and accessibly markets for industrial hemp products, as well as industrial hemp processing infrastructure located in the region. Many growers are enthusiastic about the crop, but also hesitant because of market uncertainty and a lack of accessible processing infrastructure. In addition, industry representatives participating in the work group offered that, currently, hemp crop insurance is unreasonably expensive for a mediocre policy and support from banks is extremely limited.

(iii) anticipated job growth and wage expectations;

Job growth will be a function of the overall growth of the industry in Virginia. At the farm level, new job growth may be limited, as new hemp production will likely come at the expense of other crops, with farmers shifting their acreage and labor between hemp and other crops. However, the presence of a new market opportunity for growers will although them to diversify their production, increase their profitability, and to maintain and grow their overall farming operations, bringing significant benefit to the Commonwealth. Both the hemp fiber processor and CBD extraction companies that presented to working group believe there is room for several more industrial hemp processing facilities to be located in the Commonwealth, indicating room for industry growth if markets materialize.

For industrial hemp processors, based on the Virginia experience, total job creation in the 10 to 25 per facility seems typical. Wage expectations are a reflection of the existing labor market and the skills required for the position. Overall wage levels in CBD production will likely be higher than in fiber production, as those employees are more akin to those in food and beverage manufacturing, while hemp fiber processing is more akin to ag commodity processing. Importantly, in both these projects the companies will be paying an average wage higher than the average prevailing wage in the locality where they are located.

(iv) talent and skill requirements;

Workforce requirements vary between the three different types of industrial hemp processing.

According to Golden Piedmont Labs, CBD processing largely requires chemists, equipment operators and maintenance positions. The Virginia Economic Development Partnership's Research Team compiled the following information using CBD processing companies nationwide to evaluate workforce requirements for the industry, workforce availability in the Commonwealth and average wages for those positions.

Sample occupations and available workforce for CBD Oil Extraction

Virginia Statewide						
CBD Oil Extraction Occupations						
Source: Emsi						
SOC	**Description**	**2019 Jobs**	**2019 Resident Workers**	**Pct. 25 Hourly Earnings**	**Median Hourly Earnings**	**Pct. 75 Hourly Earnings**
19-2031	Chemists	1,517	1,735	$32.71	$45.74	$59.78
19-4011	Agricultural and Food Science Technicians	474	448	$15.86	$19.95	$23.71
19-4031	Chemical Technicians	1,284	1,316	$17.29	$22.13	$27.84
51-9011	Chemical Equipment Operators and Tenders	1,593	1,628	$15.18	$18.59	$24.90
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	1,193	1,192	$15.14	$18.12	$24.38
51-9021	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	751	654	$14.03	$16.89	$19.54

[more information coming from VEDP on hemp fiber processing occupations]

(v) site and building needs; and

Industry members in the working group suggested that the most important aspect of site selection for industrial hemp processors is proximity to growers, for both fiber production and CBD extraction facilities. Both Appalachian Biomass Processing and Golden Piedmont Labs source product largely from within a 50-mile radius of the processing facility.

According to research and business investment staff at the Virginia Economic Development Partnership, site and building needs will vary depending on the type of processing – CBD vs. industrial fiber. CBD processing typically requires a food-grade building. Currently in Virginia, there are no food-grade buildings outfitted with refrigeration available and all existing food-grade buildings available in the Commonwealth are likely too small for CBD processing companies' needs. There are several build-to-suit options and virtual buildings that are permit ready for this sort of industry. However, for a new construction, it costs an additional $20-$40 per square foot for a food-grade building. To upfit an existing building to food grade, it costs an additional $40-$60 per square foot. For fiber processing, most existing industrial buildings could be sufficient, and there is also opportunity for on-farm processing using agricultural buildings.

(vi) manufacturing companies and supply chain requirements.

Manufacturing companies using industrial hemp derived products are essential to the expansion of the industry. Currently, Europe is a leader in the manufacture of industrial products using industrial hemp. Development of a strong industrial hemp production and processing infrastructure is an important first step in attracting major manufacturers of industrial hemp products.

Virginia Resources for seizing opportunities for development and manufacturing in the industrial hemp industry

- Virginia Agribusiness Council
- Chief Workforce Development Advisor
- Tobacco Region Revitalization Commission
- Virginia Farm Bureau Federation
- VDACS
- Virginia Economic Development Partnership

[staff of each organization participating in the working groups is being given the opportunity to provide two-three paragraphs describing how they can assist in the development and growth of manufacturing in the industrial hemp industry in Virginia]

Conclusion

[section will summarize findings of study and of work group's discussion from August 25 meeting]

VIRGINIA FREEDOM OF INFORMATION ADVISORY COUNCIL
COMMONWEALTH OF VIRGINIA

ELECTRONIC MEETINGS
PUBLIC COMMENT FORM

WE NEED YOUR HELP--Please give us your feedback regarding how meetings using electronic communications technology compare to traditional meetings where everyone is present in the same room at the same time.

1. Name of the public body holding the meeting: _____

2. Date of the meeting: _____

3. What are your overall thoughts or comments about this meeting? _____

_____

4. Where did you attend this meeting -- main meeting location OR from a remote location? (circle one)

5. Technology used for the meeting (audio only or audio/visual, devices and/or software used--please be as specific as possible--for example, speakerphone, iPad, Skype, WebEx, Telepresence, etc.):

_____

6. Were you able to hear everyone who spoke at the meeting (members of the body and members of the public)?

Poor Excellent
1 2 3 4 5

COMMENT_____

7. How easy was it for you to obtain agenda materials for this meeting?

Easy Difficult
1 2 3 4 5

COMMENT_____

8. Could you hear/understand what the speakers said or did static, interruption, or any other technological problems interfere?

Easy Difficult
1 2 3 4 5

COMMENT_____

9. If the meeting used audio/visual technology, were you able to see all of the people who spoke?

Poorly Clearly
1 2 3 4 5

COMMENT_____

10. If there were any presentations (PowerPoint, etc.), were you able to hear and see them?

Poorly Clearly
1 2 3 4 5

COMMENT_____

11. Were the members as attentive and did they participate as much as you would have expected?

Less More
1 2 3 4 5

COMMENT_____

12. Were there differences you noticed in how the members interacted?

With the other members present:

Very Different No Difference
1 2 3 4 5

With members participating from other locations:

Very Different No Difference
1 2 3 4 5

With the public:

Very Different No Difference
1 2 3 4 5

COMMENT_____

13. Did you feel the technology was a help or a hindrance?

Hindered Helped
1 2 3 4 5

COMMENT_____

14. How would you rate the overall quality of this meeting?

Poor Excellent
1 2 3 4 5

COMMENT_____

THANK YOU. Please send your completed form by mail, facsimile or electronic mail to the FOIA Council using the following contact information:

Virginia Freedom of Information Advisory Council
General Assembly Building, Second Floor
201 North 9th Street, Richmond, Virginia 23219
foiacouncil@dls.virginia.gov/Fax: 804-371-8705/Tele: 866-448-4100