

# VIRGINIA DEPARTMENT OF HEALTH

## Office of Licensure and Certification

### Division of Certificate of Public Need

#### Staff Analysis

July 19, 2023

**RE: COPN Request No. VA-8701**

Carilion Rockbridge Community Hospital

Lexington, Virginia

Expand CT Services with the Addition of 1 CT Scanner

#### Applicant

Carilion Rockbridge Community Hospital (CRCH) is a 501(c)(3) non-profit hospital with no subsidiaries. CRCH is a wholly owned subsidiary of Carilion Clinic. The proposed computed tomography scanner would be placed at CRCH, located at 1 Health Circle, Lexington, Virginia 24450, in Planning District (PD) 6, within Health Planning Region (HPR) I.

#### Background

A computed tomography (CT) scan is a diagnostic imaging tool that utilizes x-ray technology to produce imaging of the inside of the body and can show bones, muscles, organs, and blood vessels. CT scans are more detailed than x-rays; rather than the standard straight-line x-ray beam, CT imaging uses an x-ray beam that moves in a circle around the body to show structures in enhanced detail.<sup>1</sup> The scans can be used to help diagnose tumors, investigate internal bleeding, or investigate other possible injuries or damage; additionally, early CT detection is key in stroke treatment to determine if thrombolytics can be administered safely. CT scans are also utilized in cardiology, with or without intravenous (IV) contrast (dye), to better visualize your heart structure and associated blood vessels.<sup>2</sup> With multi-slice scanning, your healthcare provider can get high-resolution, 3D images of your moving heart and great vessels.<sup>3</sup> The scans can be done with or without contrast; contrast is a substance taken either orally or injected within the body, causing a particular organ or tissue to be seen more clearly.<sup>4</sup>

The most recent Weldon-Cooper data projects a total PD 6 population of 324,834 persons by 2030 (Table 1). This represents an approximate 13.3% increase in total population from 2010-2030. Comparatively, Weldon-Cooper projects the total population of Virginia to increase by 16.63% for the same period. With regard to Lexington City specifically, Weldon-Cooper projects a population

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<sup>1</sup> <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/computed-tomography-ct-scan#:~:text=Computed%20tomography%20is%20commonly%20referred,fat%2C%20organs%20and%20blood%20vessels.>

<sup>2</sup> [https://my.clevelandclinic.org/health/diagnostics/16834-cardiac-computed-tomography#:~:text=A%20cardiac%20computed%20tomography%20\(CT,%2C%20arteries%2C%20aorta%20and%20more.](https://my.clevelandclinic.org/health/diagnostics/16834-cardiac-computed-tomography#:~:text=A%20cardiac%20computed%20tomography%20(CT,%2C%20arteries%2C%20aorta%20and%20more.)

<sup>3</sup> Ibid.

<sup>4</sup> <https://www.hopkinsmedicine.org/health/treatment-tests-and-therapies/computed-tomography-ct-scan#:~:text=Computed%20tomography%20is%20commonly%20referred,fat%2C%20organs%20and%20blood%20vessels.>

growth increase of only 8.2% from 2010 to 2030. Regarding the 65 and older age cohort for PD 6, Weldon-Cooper projects a much more rapid increase in population growth (an approximate 56.9% increase from 2010 to 2030) (Table 2). This is significant, as this population group typically uses health care resources, including CT diagnostic imaging services, at a rate much higher than those individuals under the age of 65. Considering Lexington City specifically, Weldon-Cooper projects the 65 and older age cohort to decrease by 3.4% from 2010 to 2030.

PD 6’s total population has experienced relatively stable growth, featuring a 6.5% increase between 2010-2020 and a projected increase of 6.4% from 2020-2030 (Table 1). Contrarily, PD 6’s 65+ cohort is experiencing a decline in growth as it experienced a rise in this population of 29.9% between 2010-2020 and is projecting only a 20.8% increase between 2020-2030. While the 65+ population in this PD is continuing to grow, the rate of growth is slowing.

**Table 1. Statewide and PD 6 Total Population Projections: 2010-2030**

Locality	2010	2020	% Change 2010-2020	2030	% Change 2020-2030	2010-2030 % Change
Virginia	8,001,024	8,765,502	8.17%	9,331,666	7.82%	16.63%
Augusta	73,750	75,734	2.7%	80,035	5.7%	8.5%
Bath	4,731	4,377	(7.5%)	3,980	(9.1%)	(15.9%)
Highland	2,321	2,258	(2.7%)	2,080	(7.9%)	(10.4%)
Rockbridge	22,307	22,636	1.5%	23,290	2.9%	4.4%
Rockingham	76,314	82,720	8.4%	89,156	7.8%	16.8%
Buena Vista	6,650	6,302	(5.2%)	6,222	(1.3%)	(6.4%)
Harrisonburg	48,914	56,012	14.5%	63,037	12.5%	28.9%
Lexington	7,042	7,447	5.8%	7,622	2.3%	8.2%
Staunton	23,746	25,293	6.5%	25,577	1.1%	7.7%
Waynesboro	21,006	22,613	7.7%	23,835	5.4%	13.5%
<b>TOTAL PD 6</b>	<b>286,781</b>	<b>305,392</b>	<b>6.5%</b>	<b>324,834</b>	<b>6.4%</b>	<b>13.3%</b>

Source: U.S. Census, Weldon Cooper Center Projections (August) and DCOPN (interpolations)

**Table 2. PD 6 Population Projections Age 65+: 2010-2030**

Locality	2010	2020	% Change 2010-2020	2030	% Change 2020-2030	2010-2030 % Change
Augusta	11,839	16,687	40.9%	20,388	22.2%	72.2%
Bath	1,052	1,166	10.9%	1,255	7.6%	19.3%
Highland	579	690	19.2%	798	15.6%	37.9%
Rockbridge	4,620	6,364	37.7%	7,688	20.8%	66.4%
Rockingham	11,964	16,179	35.2%	20,685	27.8%	72.9%
Buena Vista	1,068	1,204	12.7%	1,164	(3.3%)	9.0%
Harrisonburg	4,033	4,918	21.9%	5,944	20.9%	47.4%
Lexington	1,077	1,089	1.1%	1,040	(4.4%)	(3.4%)
Staunton	4,690	5,525	17.8%	6,311	14.2%	34.6%
Waynesboro	3,567	3,955	10.9%	4,542	14.8%	27.3%
<b>TOTAL PD 6 65+</b>	<b>44,489</b>	<b>57,777</b>	<b>29.9%</b>	<b>69,815</b>	<b>20.8%</b>	<b>56.9%</b>

Source: U.S. Census, Weldon Cooper Center Projections (August) and DCOPN (interpolations)

The PD 6 poverty rate of 15.4% is higher than the overall Virginia poverty rate of 10.7% (**Table 3**). Much of PD 6 is rural. In 2020, the average per capita income was \$43,359 while the average for Virginians as a whole was \$61,958.<sup>5</sup> Furthermore, based on 2020 data, the poverty rate in rural Virginia is 14.9%, compared with 8.5% in urban areas of the state.<sup>6</sup>

**Table 3. Poverty Rates**

Locality	% in Poverty
Augusta	9.0%
Bath	10.7%
Highland	12.7%
Rockbridge	12.0%
Rockingham	8.7%
Buena Vista	20.1%
Harrisonburg	28.2%
Lexington	21.6%
Staunton	13.7%
Waynesboro	17.4%
<b>TOTAL PD 6</b>	<b>15.4%</b>
<b>Virginia</b>	<b>10.7%</b>

Source: Index Mundi

The average PD 6 CT services utilization using the most recently published Virginia Health Information (VHI) data from 2021 is approximately 86.8% of the State Medical Facilities Plan (SMFP) threshold of 7,400 procedures before a new scanner is needed (**Table 4**). CRCH’s 2021 utilization was 94.3% of the SMFP threshold (**Table 4**). The Covid-19 pandemic created a decrease in utilization of many health services, including CT scanning.<sup>7</sup>

CRCH’s procedural volume and projected volumes are depicted in **Table 5**. Despite the typically expected decrease in healthcare services, included CT scanning, due to the pandemic, CRCH has seen an increase in volumes, both outpatient and inpatient CT services, between 2020- present (**Table 5**). In 2022, they performed a total of 7,886 procedures, or 106.6% utilization; in 2023, they are anticipating a total of 8,796 procedures, or 118.9% utilization. Without a second CT scanner, the projected utilization for Year 1 is 132.6% and is 146.7% for Year 2. With a second CT scanner, the projected utilization for Year 1 is 66.3% per scanner, and 73.3% for Year 2.

<sup>5</sup> <https://www.ruralhealthinfo.org/states/virginia>

<sup>6</sup> Ibid.

<sup>7</sup> Agarwal M, Udare A, Patlas M, Ramonas M, Alaref AA, Rozenberg R, Ly DL, Golev DS, Mascola K, van der Pol CB. Effect of COVID-19 on computed tomography usage and critical test results in the emergency department: an observational study. *CMAJ Open*. 2020 Sep 14;8(3):E568-E576. doi: 10.9778/cmajo.20200148. PMID: 32928878; PMCID: PMC7505522.

Prior to the pandemic, CRCH (known formerly as Carilion Stonewall Jackson Hospital) reported the following total volumes:

- 4,182 total CT procedures in 2017;
- 5,098 total CT procedures in 2018; and
- 5,459 total CT procedures in 2019.

The 2021 volumes for CRCH are under the SMFP threshold (**Table 5**), however, the increasing volume trend appears to have been ongoing prior to the pandemic and has increased during the pandemic despite the typical declining utilization trend seen between 2020 and 2021.

**Table 4. PD 6 Inventory of COPN Authorized CT Scanners and 2021 Utilization**

Facility	Fixed Units	Mobile Units	Fixed CT Procedures	Fixed CT Procedures/Scanner	Fixed CT Utilization
Augusta Health	4	0	30,253	7,563	102.2%
Bath County Community Hospital	1	0	948	948	12.8%
<i>Carilion Rockbridge Community Hospital</i>	<i>1</i>	<i>0</i>	<i>6,981</i>	<i>6,981</i>	<i>94.3%</i>
Sentara Bridgewater Health Center <sup>1</sup>	1	0	N/A	N/A	N/A
Sentara RMH Medical Center	4	0	32,486	8,122	109.8%
<b>PD 6 Total</b>	<b>11</b>	<b>0</b>	<b>70,668</b>	<b>6,424</b>	<b>86.8%</b>

Source: VHI 2021 Data

<sup>1</sup>COPN No. VA-04719 was authorized on August 31, 2020, and is proceeding behind schedule due to current national supply and labor shortages. The COPN was extended on February 9, 2023, to August 30, 2023.

**Table 5. CRCH Procedural Volumes**

	Actual			Annualized	Projected	
	FY 2020	FY 2021	FY2022	FY 2023	Year 1	Year 2
IP Procedures	254	347	390	393	396	399
OP Procedures	5,272	6,631	7,496	8,403	9,420	10,455
<b>Total Procedures</b>	<b>5,526</b>	<b>6,978</b>	<b>7,886</b>	<b>8,796</b>	<b>9,816</b>	<b>10,854</b>

Sources: VHI data and COPN Req. VA-8701

CRCH is a 25-bed critical access hospital (CAH) offering both inpatient and outpatient services, including CT services. CRCH has been designated as a CAH by the Centers for Medicare and Medicaid Services (CMS). CAHs must be located in rural communities and are designed to reduce the financial vulnerability of rural hospitals and improve access to healthcare by providing essential healthcare services in these rural communities. Additionally, CAHs must be more than a 35-mile drive from another hospital or be more than a 15-mile drive from another hospital in an area with mountainous terrain or only secondary roads.

**Proposed Project**

CRCH proposes to add a second CT scanner for a total complement of two CT scanners on its main campus at 1 Health Circle, Lexington, Virginia. CRCH has all utilities required for the project as the CT scanner to be added is within an existing medical care facility. The new scanner will be central to CRCH’s emergency department (ED). Additionally, the location will allow for a common control room to be shared with the existing CT scanner, reducing costs further.

If approved, the scanner to be purchased is a Siemens SOMOTOM X.cite CT scanner. The proposed scanner will have two software packages, one for cardiac studies and a positioning package for newer technologies. This scanner also has dual energy capabilities which allow for a few unique CT abilities such as: better detection of subtle liver metastases for cancer patients, chemical characterization of renal stones, and better detection of subtle fractures by measuring bone marrow edema (bone marrow swelling). Additionally, the X.cite system can perform CT brain perfusion studies for early stroke detection and CT studies of the heart to support the Carilion Stroke and Cardiovascular programs, respectively. Moreover, the proposed scanner has a large gentry (opening) width of 82 CM to allow for CT scanning of patients of larger size; the significantly improved energy capabilities will allow for an overall radiation dose reduction for these larger patients, too. Some of these features are not present on all CT scanners in the Carilion Clinic locations. The applicant reports several studies that cannot be performed with their current CT scanner and that some patients must travel to locations greater than 40 minutes away to have these specific studies completed (estimated frequency was not provided).

The anticipated dates of construction are to begin and end on February 29, 2024, and June 28, 2024, respectively. The target date of opening is July 31, 2024. The total capital cost associated with the project is \$1,347,260, of which \$1,164,560 is allocated for equipment not included in the construction contract and \$182,700 are related to direct construction costs.

### **Project Definition**

Section 32.1-102.1:3 of the Code of Virginia defines a project, in part, as the “addition by an existing medical care facility described in subsection A[, to include a]ny facility licensed as a hospital[,] of any ... computed tomographic (CT) scanning...”

### **Required Considerations -- § 32.1-102.3, of the Code of Virginia**

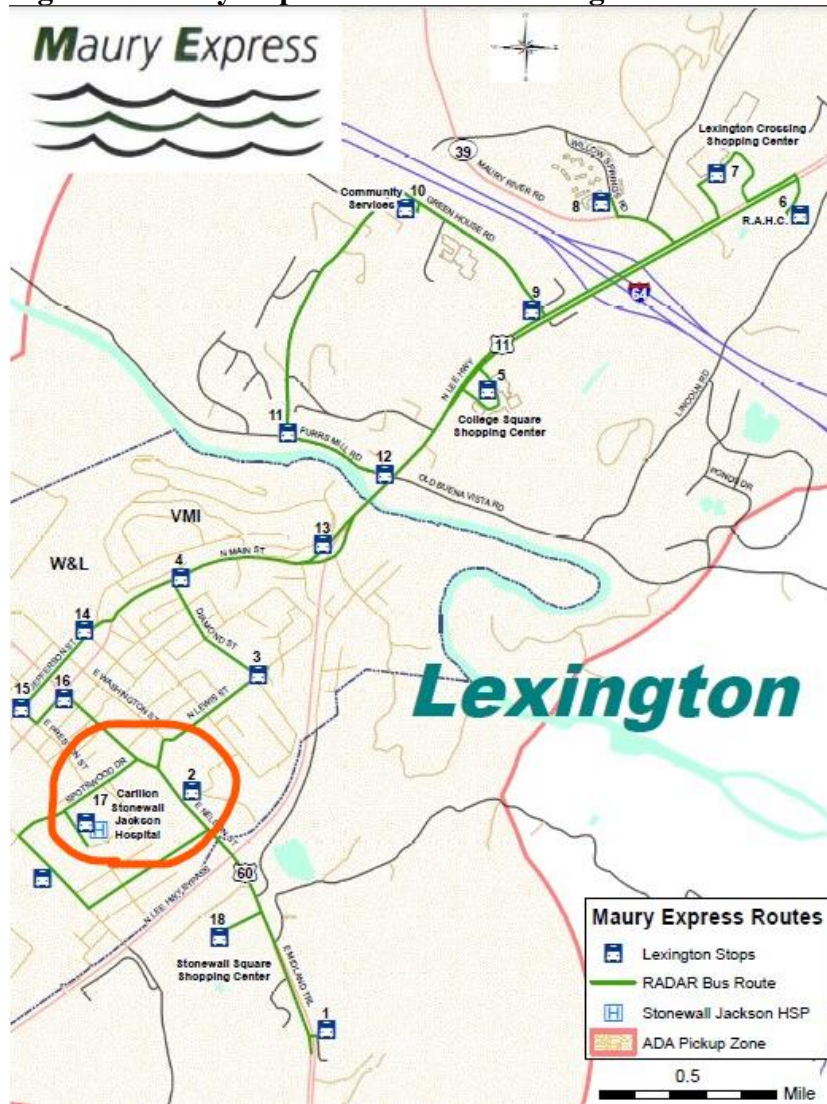
In determining whether a public need exists for a proposed project, the following factors shall be taken into account when applicable.

- 1. The extent to which the proposed service or facility will provide or increase access to needed services for residents of the area to be served, and the effects that the proposed service or facility will have on access to needed services in areas having distinct and unique geographic, socioeconomic, cultural, transportation, and other barriers to access to care.**

CRCH is located approximately 3 miles from I-81. RADAR, a not-for-profit public transportation provider, launched the Maury Express in 2011; the Maury Express provides transportation for Buena Vista, Lexington, and Rockbridge County and stops near CRCH (**Figure 1**). The Maury Express is available Monday-Friday from 8AM to 6PM, and Saturday from 10AM to 4PM. The cost associated with using the Maury Express is \$0.50 per trip. Children under six years old require no fare. Individuals who are ADA certified may request

the van to deviate off of the route to make pick-ups and drop-offs; however, the deviation cannot exceed  $\frac{3}{4}$  of a mile from the route.<sup>8</sup>

**Figure 1. Maury Express Bus Route-Lexington**



Source: radartransit.org

The majority, 59.4%, of the patient origin for CRCH reside in Rockbridge County (including Lexington City) (Table 6). More than 84% of CRCH's patients reside in Rockbridge County and Buena Vista County (Table 6).

<sup>8</sup> [https://radartransit.org/wp-content/uploads/2021/10/102021\\_RADAR\\_Maury-Express\\_Brochures.pdf](https://radartransit.org/wp-content/uploads/2021/10/102021_RADAR_Maury-Express_Brochures.pdf)

**Table 6. CRCH Patient Origin FY 22**

Location	% of Total
Rockbridge County (inc. Lexington City)	59.4%
Buena Vista City	24.7%
Alleghany County	4.7%
Botetourt County	2.0%
Other	9.1%

Source: COPN Req. VA-8701

Rockbridge County’s poverty rate is 12.0%, Lexington City’s poverty rate is 21.6%, and Buena Vista City’s poverty rate is 20.1% (**Table 3**). All of the CRCH’s primary service area (PSA) is above the average of the state, which is 10.7%. CRCH is a CAH and provides access to services of a rural community, but also to a community facing severe economic strain.

**2. The extent to which the project will meet the needs of the residents of the area to be served, as demonstrated by each of the following:**

**(i) The level of community support for the project demonstrated by citizens, businesses, and governmental leaders representing the area to be served.**

DCOPN received four letters of support for the proposed project from the local community. Collectively, these letters articulate several benefits including:

- The Chamber of Commerce Board of Directors supports the project due to the rural nature of the location of services, the difficulty with access for rural patients, and the overutilization the current CT scanner at CRCH is experiencing.
- CRCH offers specialized CT procedures, along with other services, that are not available at other facilities in the area.

DCOPN did not receive any letters of opposition for the project.

Section 32.1-102.6 B of the Code of Virginia directs DCOPN to hold one public hearing on each application in a location in the county or city in which the project is proposed or a contiguous county or city in the case of competing applications, or in response to a written request by an elected local government representative, a member of the General Assembly, the Commissioner, the applicant, or a member of the public. COPN Request No. VA-8701 is not competing with another project in this batch cycle and DCOPN did not receive a request to conduct a public hearing for the proposed project. Thus, no public hearing was held.

**(ii) The availability of reasonable alternatives to the proposed service or facility that would meet the needs of the population in a less costly, more efficient, or more effective manner.**

There does not appear to be a reasonable alternative that would meet the needs of the population in a less costly, more efficient, or more effective manner. While the closest CT services provider, Bath County Community Hospital, only performed 948 procedures in 2021 (**Table 4**), this provider’s 30-minutes’ drive time radius does not overlap at all with CRCH’s

30-minutes' drive time radius (**Figure 3**). CRCH's driving radius does overlap slightly with Augusta Health's 30-minutes' drive time radius (**Figure 3**); however, Augusta Health's CT utilization was 102.2% in 2021 (**Table 4**). To address the increasing utilization of CT services most adequately at CRCH, the proposed project appears to be the most reasonable option.

**(iii) Any recommendation or report of the regional health planning agency regarding an application for a certificate that is required to be submitted to the Commissioner pursuant to subsection B of § 32.1-102.6.**

Currently there is no organization in HPR I designated by the Virginia Department of Health to serve as the Health Planning Agency for PD 6. Therefore, this consideration is not applicable to the review of the proposed project.

**(iv) Any costs and benefits of the project.**

The total capital cost associated with the project is \$1,347,260, of which \$1,164,560 is allocated for equipment not included in the construction contract and \$182,700 are related to direct construction costs. Additionally, three full-time equivalent staff are needed for the project.

CRCH provides CT services, among others, regardless of ability to pay, in an area with a high poverty rate and access difficulties pursuant to rural communities. As a CAH, CRCH is tasked with providing these services to mitigate the vulnerabilities this community faces. Demand has been increasing steadily with no indication of leveling within the near future; this project will allow for timely access to CT services, including CT studies that are not currently offered at this hospital.

**(v) The financial accessibility of the project to the residents of the area to be served, including indigent residents.**

The applicant has provided assurances that CT services will be accessible to all patients, regardless of financial considerations. In 2020, the most recent data available, CRCH reports 2.14% of their gross revenues to be charity, which is consistent with HPR I's average of 2.1% (**Table 7**). Furthermore, the Pro Forma Income Statement provided by the applicant anticipates a charity care contribution equal to 2.1% of gross revenues derived from CT services at CRCH, an amount consistent with the average HPR I contribution. Recent changes to §32.16-102.4B of the Code of Virginia now require DCOPN to place a charity care condition on all applicants seeking a COPN. For this reason, DCOPN recommends that the proposed project, if approved, be subject to a 2.1% charity care condition, to be derived from total CT gross patient services revenues, consistent with the HPR I average. DCOPN again notes that its recommendation includes a provision allowing for the reassessment of the charity care rate at such time as more reliable data becomes available regarding the full impact of Medicaid expansion in the Commonwealth.



**Table 7. Charity Care Contributions for HPR I, 2020**

Health Planning Region I			
2020 Charity Care Contributions at or below 200% of Federal Poverty Level			
Hospital	Gross Patient Revenues	Adjusted Charity Care Contribution	Percent of Gross Patient Revenue:
Culpeper Regional Hospital	\$359,182,141	\$12,102,933	3.37%
University of Virginia Medical Center	\$5,962,089,202	\$186,745,010	3.13%
UVA Transitional Care Hospital	\$66,296,097	\$2,047,513	3.09%
Sentara RMH Medical Center	\$918,098,298	\$22,656,844	2.47%
<b>Carilion Stonewall Jackson Hospital<sup>1</sup></b>	<b>\$137,363,522</b>	<b>\$2,944,339</b>	<b>2.14%</b>
Martha Jefferson Hospital	\$731,733,007	\$11,500,103	1.57%
Page Memorial Hospital	\$63,530,998	\$792,862	1.25%
Augusta Medical Center	\$1,059,370,204	\$12,042,914	1.14%
Shenandoah Memorial Hospital	\$121,946,999	\$1,321,088	1.08%
Warren Memorial Hospital	\$150,609,573	\$1,621,917	1.08%
Stafford Hospital Center	\$287,238,184	\$3,044,975	1.06%
Winchester Medical Center	\$1,433,802,000	\$14,305,992	1.00%
Spotsylvania Regional Medical Center	\$589,741,098	\$5,843,457	0.99%
Mary Washington Hospital	\$1,429,424,065	\$13,513,637	0.95%
Bath Community Hospital	\$23,228,689	\$145,250	0.63%
Fauquier Hospital	\$412,365,921	\$1,528,892	0.37%
Total Facilities			16
Median			1.1%
<b>Total \$ &amp; Mean %</b>	<b>\$13,386,837,857</b>	<b>\$280,054,793</b>	<b>2.1%</b>

Source: VHI 2020

<sup>1</sup>Carilion Stonewall Jackson Hospital changed its name to Carilion Rockbridge Community Hospital in 2020.<sup>9</sup>

**(vi) At the discretion of the Commissioner, any other factors as may be relevant to the determination of public need for a project.**

DCOPN did not identify any other discretionary factors, not discussed elsewhere in this staff analysis report, to bring to the attention of the Commissioner as may be relevant in determining a public need for the proposed project.

**3. The extent to which the application is consistent with the State Medical Facilities Plan.**

**Chapter 230. State Medical Facilities Plan, Part I. Definitions and General Information  
 Article 1. Criteria and Standards for Computed Tomography**

**12VAC5-230-90. Travel time.**

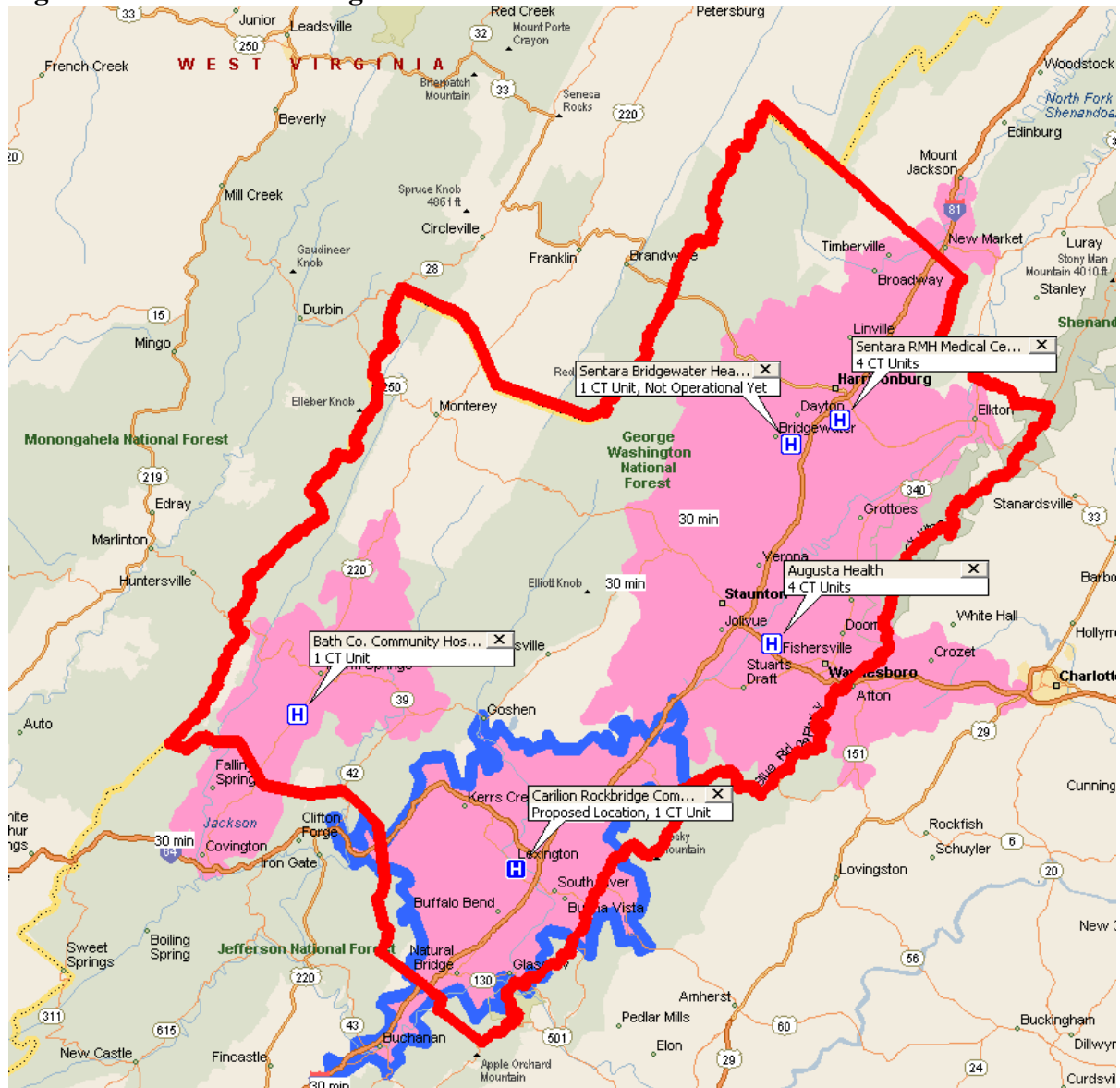
**CT services should be within 30 minutes driving time one way under normal conditions of 95% of the population of the health planning district using a mapping software as determined by the commissioner.**

Illustrated below in the pink shaded area, there is a large geographic area of PD 6 not within a 30-minutes driving time from CT services. However, some of the area included consists of the George Washington National Forest, the town of Monterey with a population of 166 in 2020,

<sup>9</sup> <https://www.wsls.com/news/local/2020/07/24/carilion-to-rename-lexingtons-stonewall-jackson-hospital/>

and the town of Craigsville with a population of 904 in 2020. The total population of PD 6 in 2020 was 324,834. Of the total population, both Craigsville and Monterey account for approximately 0.33% in 2020. Considering the other rural, sparsely populated areas not within a 30-minutes driving distance to CT services in PD 6, it is not likely that the areas not covered account for more than 5.0% of the total PD 6 population. The red outline is indicative of the PD 6 boundary, while the blue line represents the 30-minutes driving time radius from CRCH (Figure 2). Therefore, it is reasonable to assume that approximately 95% of the PD 6 population is within 30-minutes driving time of CT services.

**Figure 2. 30-minutes Driving Radius of CT Services in PD 6**



Sources: Google Maps, DCOPN Data, and Microsoft Office Streets & Trips

**12VAC5-230-100. Need for new fixed site or mobile service.**

**A. No new fixed site or mobile CT service should be approved unless fixed site CT services in the health planning district performed an average of 7,400 procedures per existing and approved CT scanner during the relevant reporting period and the proposed new service would not significantly reduce the utilization of existing providers in the health planning district. The utilization of existing scanners operated by a hospital and serving an area distinct from the proposed new service site may be disregarded in computing the average utilization of CT scanners in such health planning district.**

**B. Existing CT scanners used solely for simulation with radiation therapy treatment shall be exempt from the utilization criteria of this article when applying for a COPN. In addition, existing CT scanners used solely for simulation with radiation therapy treatment may be disregarded in computing the average utilization of CT scanners in such health planning district.**

While the applicant is not proposing a new fixed or mobile service but rather is proposing an expansion of an existing service, DCOPN utilized this provision to calculate the need (or redundancy) of fixed or mobile CT services for the Commissioner's consideration. In PD 6 there are 11 fixed CT scanners (no mobile CT scanners), which performed a total of 70,668 procedures in 2021, the most recent data available from VHI (Table 4).

$$\begin{aligned} \text{Total Procedures} \div 7,400 \text{ Procedures} &= \text{Needed Scanners in PD} \\ 70,668 \div 7,400 &= 9.55, \text{ or } 10 \text{ Scanners Needed} \\ 11 \text{ Current Scanners} - 10 \text{ Scanners Needed} &= \text{Surplus of } 1 \text{ CT Scanner} \end{aligned}$$

While the calculations yield a surplus of 1 CT scanner, the data used for the calculations is from 2021, whose utilization volumes were affected by the pandemic. However, this data is the data available for the relevant reporting period. Additionally, there is not yet data for the scanner approved and not yet operational authorized by COPN No. VA-04719 for Sentara Bridgewater Health Center. Including the not-yet-operational CT scanner for a total of 11 scanners, the utilization per scanner was approximately 86.8% per scanner in 2021; excluding the not-yet-operational scanner, the average utilization was approximately 95.5% in 2021.

Also worthy of note, the location requesting the additional CT scanning capacity is located approximately 35 minutes from the next nearest hospital location.

As illustrated by the applicant's own data for 2022 (Table 5), there is a reasonable likelihood that 2022 volumes were much higher than those that occurred during the Covid-19 pandemic.

**12VAC5-230-110. Expansion of fixed site service.**

**Proposals to expand an existing medical care facility's CT service through the addition of a CT scanner should be approved when the existing services performed an average of 7,400 procedures per scanner for the relevant reporting period. The commissioner may authorize placement of a new unit at the applicant's existing medical care facility or at a separate location within the applicant's primary service area for CT services, provided the proposed expansion is not likely to significantly reduce the utilization of existing providers in the health planning district.**

Observed in **Table 5**, CRCH performed CT services in excess of the SMFP threshold of 7,400 starting in 2022, and project a continued increase in procedural volume. In 2022, CRCH performed 7,886 procedures (or 106.6% utilization) and in 2023 the annualized volume is expected to be 8,796 procedures (or 118.9% utilization) (**Table 5**). CRCH's utilization has continued to grow following Covid in 2019, with an increase in services continuing through the present since 2020.

The applicant projects Year 1 volumes of 9,816 and Year 2 volumes of 10,854. With the additional scanner being operational, utilization per scanner would be 66.3% for Year 1 and 73.3% for Year 2. While this is less than the SFMP threshold of 7,400 for 100% utilization, 66.3% and 73.3% is reasonable considering the location and services provided at CRCH. As a CAH, CRCH is tasked with provided an array of services in both outpatient and inpatient settings. The CT scanners provide needed diagnostics for multiple programs within the hospital and balance between scheduled outpatient procedures and emergency procedures required by the ED cases. Although higher utilization yields lower healthcare costs and nationally there is a trend of underutilizing CT scanners (one of the most expensive pieces of medical equipment between purchasing, life of a unit, and maintenance)<sup>10</sup>, with CRCH being a CAH, access is of the utmost importance.

**12VAC5-230-120. Adding or expanding mobile CT services.**

**A. Proposals for mobile CT scanners shall demonstrate that, for the relevant reporting period, at least 4,800 procedures were performed and that the proposed mobile unit will not significantly reduce the utilization of existing CT providers in the health planning district.**

**B. Proposals to convert authorized mobile CT scanners to fixed site scanners shall demonstrate that, for the relevant reporting period, at least 6,000 procedures were performed by the mobile scanner and that the proposed conversion will not significantly reduce the utilization of existing CT providers in the health planning district.**

This provision of the SMFP is not applicable as the applicant is not proposing to add or expand mobile CT services.

**12VAC5-230-130. Staffing.**

**CT services should be under the direction or supervision of one or more qualified physicians.**

The applicant provides assurances that their CT services will be under the direction or supervision of one or more qualified physicians.

**12VAC5-230-80. When institutional expansion needed.**

**A. Notwithstanding any other provisions of this chapter, the commissioner may grant approval for the expansion of services at an existing medical care facility in a health**

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<sup>10</sup> Tadia, Gupta, Satpathy, Gupta & Arya (April-June 2021). Utilization Review of Imaging Equipment: An Insight Into CT Scanning. Medico-legal Update, Volume 21, No. 2.

planning district with an excess supply of such services when the proposed expansion can be justified on the basis of a facility's need having exceeded its current service capacity to provide such service or on the geographic remoteness of the facility.

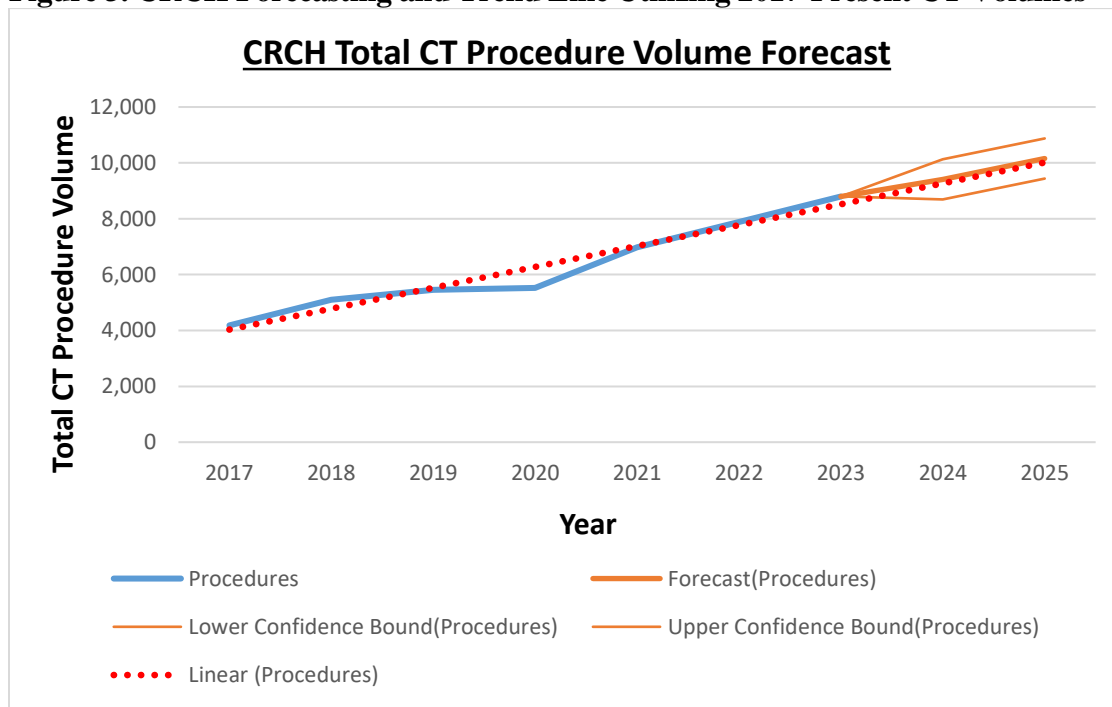
**B. If a facility with an institutional need to expand is part of a health system, the underutilized services at other facilities within the health system should be reallocated, when appropriate, to the facility with the institutional need to expand before additional services are approved for the applicant. However, underutilized services located at a health system's geographically remote facility may be disregarded when determining institutional need for the proposed project.**

**C. This section is not applicable to nursing facilities pursuant to § 32.1-102.3:2 of the Code of Virginia.**

**D. Applicants shall not use this section to justify a need to establish new services.**

As illustrated in **Figure 2**, CRCH is located in a remote area, isolated by rural, mountainous terrain. The planning district data indicates a surplus of 1 CT scanner; however, the volumes at CRCH indicate a utilization higher than the SMFP threshold and project continued growth. Utilizing data CRCH reported to VHI from 2017-2021 and the data CRCH reported for 2022 and annualized for 2023, DCOPN constructed **Figure 3** via the forecasting function in Excel. The red dotted line represents the trend line using 2017-2023 data provided by the applicant to VHI and DCOPN, the blue line represents the reported volumes, and the orange lines represent the forecasted volumes for 2024 and 2025, with upper and lower confidence intervals indicated by the thinner, branching orange lines (**Figure 3**). As evidenced below, there is a slight dip in the trend line during 2019-2020, likely attributable to the pandemic, with 2021-2023 volumes indicating a return to the expected growth level.

**Figure 3. CRCH Forecasting and Trend Line Utilizing 2017-Present CT Volumes**



Sources: VHI, COPN Req. VA-8701, and Microsoft Excel

**4. The extent to which the proposed service or facility fosters institutional competition that benefits the area to be served while improving access to essential health care services for all persons in the area to be served.**

The project is not likely to foster institutional competition that would either benefit or harm the area to be served. PD 6 is generally rural and mountainous and CT services are relatively isolated from one another in the southern portion of the PD, where CRCH is located (Figure 3).

The applicant reports:

Often the single CT scanner is backed up, especially during the day, due to multiple ER patient CT requests; thus, it will aid in decreasing ER wait times for CT scans for CRBH's emergency patients.

Additionally, the current wait time reported by the applicant is 12 days for a CT scan and when patients need a cardiac CT scan, they must travel out of town. The project will make services timelier for patients who seek care at CRCH but will not increase the geographic area being served except for those patients who must travel to other locations for the select few studies that cannot currently be completed at CRCH, such as cardiac CT imaging.

**5. The relationship of the project to the existing health care system of the area to be served, including the utilization and efficiency of existing services or facilities.**

CRBH is a critical access hospital that is part of Carilion Clinic, which operates seven acute care hospitals, as well as primary care and specialty practices, urgent care centers, retail pharmacies and other ambulatory sites from the Shenandoah region to Galax and Tazewell Counties. The regional hospitals within Carilion Clinic, as well as hospitals and physicians in the area from other health systems, refer patients to CRBH within the Lexington and surrounding communities for more specialized services that are not feasible in their rural communities. These services require adequate CT capacity to provide timely, high-quality care to patients coming to CRBH from across the region for both emergent, inpatient imaging and scheduled outpatient imaging.

**6. The feasibility of the project, including the financial benefits of the project to the applicant, the cost of construction, the availability of financial and human resources, and the cost of capital.**

The total capital cost associated with the project is \$1,347,260, of which \$1,164,560 is allocated for equipment not included in the construction contract and \$182,700 are related to direct construction costs (**Table 8**).

**Table 8. Total Capital Costs Summary**

<b>Direct Construction Costs</b>		
	Cost of Materials	\$62,848
	Cost of Labor	\$90,090
	Equipment Included in Construction Contract	\$4,567
	Builder's Overhead	\$9,683
	Builder's Profit	\$4,385
	Allocation for Contingencies	\$11,127
<b>Sub-Total</b>		<b>\$182,700</b>
<b>Equipment Not Included in Construction Contract</b>		
	CT Scanner	\$1,085,000
	Cardiac Imaging Add-On	\$79,560
<b>Sub-Total</b>		<b>\$1,164,560</b>
<b>Total</b>		<b>\$1,347,260</b>

Source: COPN Req. VA-8701

Compared to the following projects, the total capital cost appears reasonable:

- COPN No. VA-04838 issued on April 11, 2023, authorizing Centra Southside Community Hospital, Inc. to add a second CT scanner with a total capital cost of \$1,545,882.
- COPN No. VA-04830 issued on February 9, 2023, authorizing Inova Health Care System d/b/a Inova Loudoun Hospital to add a CT scanner and an associated Control Room with a total capital cost of \$3,031,207.
- COPN No. VA-04826 issued February 9, 2023, authorizing Carilion Medical Center to establish CT services at Woodburn Nuclear Medicine/Metro Region PET Center with a total capital cost of \$1,417,931.

The total full time equivalent (FTE) staff needed for operation of the second CT scanner are 3 additional staff (**Table 9**). The project requires an additional 2 CT Technicians and 1 CT Technician Assistant to be hired. The applicant reports that Carilion recruits actively and contacts instructors at local institutions with CT Technologist programs. The applicant also reports that the majority of Carilion's CT Technologists are hired from the immediate area, resulting in a minimal or no impact on staffing for other providers in the area. Additionally, the staffing needs are relatively minimal as CBCH already has 11 CT Technicians. All technicians are able to perform their duties in at least one other modality, but often they are able to perform duties for two additional modalities.

**Table 9. Staffing of Existing and Expanded CT Services at CRCH**

Staff Types	Current Staffing		Additional FTE Needed	Total
	Full-Time	Vacant Positions	Full-Time	
Supervisor		0	0	0
Other Health Professionals		0	0	0
CT Technicians	11	0	2	13
CT Technician Assistants		0	1	1
<b>Total</b>	<b>11</b>	<b>0</b>	<b>3</b>	<b>14</b>

Source: COPN Req. VA-8701

Both Year 1 and Year 2 of operation are projected to see an excess of revenues over operating expenses, indicating the project has long term fiscal viability (**Table 10**).

**Table 10. Pro Forma Summary**

	Year 1	Year 2
Patient Service Revenue	\$28,021,000	\$29,376,000
Contractual Allowances and Provisions for Bad Debts	\$(20,768,000)	\$(21,968,000)
Charity Allowances	\$(196,000)	\$(206,000)
Net Patient Service Revenue	\$7,057,000	\$7,202,000
Total Operating Expenses	\$(963,000)	\$(1,104,000)
<b>Operating Income</b>	<b>\$6,094,000</b>	<b>\$6,099,000</b>

Source: COPN Req. VA-8701

- The extent to which the project provides improvements or innovations in the financing and delivery of health services, as demonstrated by: (i) The introduction of new technology that promotes quality, cost effectiveness, or both in the delivery of health care services. (ii) The potential for provision of services on an outpatient basis. (iii) Any cooperative efforts to meet regional health care needs. (iv) At the discretion of the Commissioner, any other factors as may be appropriate.**

While the CT scanner is not a new technology, the CT scanner being chosen for the project will provide certain studies that are not currently available on the existing CT scanner, causing patients to travel further to other sites where the studies can be performed. CRCH does provide CT services on an outpatient basis; due to the rural nature of the area, it is likely more cost effective to provide services in a hospital setting rather than construct/renovate a space for imaging and staffing that center. DCOPN did not identify any other discretionary factors, not discussed elsewhere in this staff analysis report, to bring to the attention of the Commissioner as may be relevant in determining the extent to which the project provides improvements or innovations in the financing and delivery of health services.

- In the case of a project proposed by or affecting a teaching hospital associated with a public institution of higher education or a medical school in the area to be served.**
  - The unique research, training, and clinical mission of the teaching hospital or**



**medical school. (ii) Any contribution the teaching hospital or medical school may provide in the delivery, innovation, and improvement of health care for citizens of the Commonwealth, including indigent or underserved populations.**

Carilion Clinic is the primary teaching hospital system aligned with the Virginia Tech Carilion School of Medicine (VTCOSM). As a result, the Radiologists practicing and interpreting studies for clinical patients at Carilion Clinic are also teaching faculty for medical students rotating through Carilion Clinic's Department of Radiology. Radiologists interpret images for regional hospitals as well, assuring standard of care delivered in all locations. Radiology is a core Clerkship rotation for medical students. Clinical decision support tools available to the students in conjunction with radiologist expertise provide education of evidence based best imaging practice for CT as well as other imaging modalities. As this is key to appropriate clinical use and application of CT for diagnosis, it improves health care for our citizens, as well as benefiting underserved populations. Additionally, VTCOSM is a research medical school with a requirement of completion of a research project for graduation. Multiple students have and are participating in clinical research in Radiology. The students learn methodologies unique to imaging research in addition to the principles of medical research as a discipline.

Neither the rotation to CRCH nor the quantity of residency slots available at CRCH were specified in the application.

### **DCOPN Summary and Findings**

CRCH proposes to expand their CT services with the addition of 1 CT scanner in PD6. While PD6's population growth is less than that of the statewide average, the PD is continuing to see stable growth. Additionally, the 65+ cohort is continuing to grow, albeit at a rate slower in the current decade than PD 6 experienced between 2010-2020. The average poverty rate is approximately 150% of the statewide poverty rate, with the poverty rates in Buena Vista and Lexington (within CRCH's primary service area) are approximately 200% of the statewide poverty average.

CRCH is a critical access hospital in a rural community, highlighting the need to provide access to timely services for both inpatient and outpatient CT services. There was no opposition to the project received by DCOPN. As the project is situated to serve rural and underserved populations without other providers in the vicinity of a 30-minutes driving radius, there appears to be no reasonable alternative that would meet the needs of the population in a less costly, more efficient, or more effective manner.

The total capital cost of the project appears reasonable in comparison to projects of similar size and scope that have been approved by the Commissioner. The project also appears to have stable short- and long-term financial viability. The staffing needs appear reasonable and not likely to significantly cause adverse effect on staffing for other providers in the PD. Considering the impact Covid-19 had on CT services utilization in the PD and the isolation of providers in the PD as a result of the mountainous terrain, the addition of one CT scanner at CRCH does not appear likely to affect other providers in the PD.

CRCH partners with the Carilion School of Medicine at Virginia Tech; approval of this project will allow for students to continue to engage in clinical research and rotations in Radiology at CRCH.

**DCOPN Staff Recommendations**

COPN Request No. VA-8701 – Carilion Rockbridge Community Hospital

The Division of Certificate of Public Need recommends the **approval** of COPN Request no.VA-8701, Carilion Rockbridge Community Hospital’s request to add a second CT scanner for the following reasons:

1. The proposal to expand CT imaging services through the addition of one CT scanner for a total complement of two CT scanners is generally consistent with the applicable standards and criteria of the State Medical Facilities Plan and the 8 Required Considerations of the Code of Virginia.
2. There does not appear to be any less costly alternative to the proposed project.
3. The capital costs of the proposed project are reasonable.
4. The proposed project is unlikely to have a significant negative impact upon the utilization, costs, or charges of other providers of CT services in PD 6.
5. The proposed project appears to be financially viable in the immediate and long-term.
6. There is no known opposition to the project.

**Charity Conditions**

DCOPN’s recommendation is contingent upon Carilion Rockbridge Community Hospital’s agreement to the following charity care condition:

Carilion Rockbridge Community Hospital will provide computed tomography (CT) services to all persons in need of this service, regardless of their ability to pay, and will provide as charity care to all indigent persons free services or rate reductions in services and facilitate the development and operation of primary care services to medically underserved persons in an aggregate amount equal to at least 2.1% of Carilion Rockbridge Community Hospital’s total patient services revenue derived from CT services as valued under the provider reimbursement methodology utilized by the Centers for Medicare and Medicaid Services for reimbursement under Title XVIII of the Social Security Act, 42 U.S.C. § 1395 et seq. Compliance with this condition will be documented to the Division of Certificate of Public Need annually by providing audited or otherwise appropriately certified financial statements documenting compliance with the preceding requirement. Carilion Rockbridge Community Hospital will accept a revised percentage based on the regional average after such time regional charity care data valued under the provider reimbursement methodology utilized by the Centers for Medicare and Medicaid Services for reimbursement under Title XVIII of the Social Security Act, 42 U.S.C. § 1395 et

seq. is available from Virginia Health Information. The value of charity care provided to individuals pursuant to this condition shall be based on the provider reimbursement methodology utilized by the Centers for Medicare and Medicaid Services for reimbursement under Title XVIII of the Social Security Act, 42 U.S.C. § 1395 et seq.

Carilion Rockbridge Community Hospital will provide CT services to individuals who are eligible for benefits under Title XVIII of the Social Security Act (42 U.S.C. § 1395 et seq.), Title XIX of the Social Security Act (42 U.S.C. § 1396 et seq.), and 10 U.S.C. § 1071 et seq. Additionally, Carilion Rockbridge Community Hospital will facilitate the development and operation of primary and specialty medical care services in designated medically underserved areas of the applicant's service area.