



Advanced Imaging for Ridgeview Clinic

Findings and Recommendations

Prepared by Luke Bousema

September 2025

SEF National Business Aptitude Award Case Study

TABLE OF CONTENTS

INTRODUCTION	4
DOCTOR BIOS	4
FINANCIAL BACKGROUND	5
REVENUE AND EXPENSES	5
STAFFING	6
EXECUTIVE SUMMARY	7
FLUOROSCOPY AND CT OPTIONS	8
FLUOROSCOPY PURCHASE CONSIDERATIONS	9
CT PURCHASE CONSIDERATIONS	10
CLINIC LAYOUT AND ADVANCED IMAGE INTEGRATION	13
CURRENT CLINIC LAYOUT	13
SURGICAL REMODEL WITH C-ARM FLUOROSCOPY	14
SURGICAL REMODEL AND CT BUILDOUT	15
COST BENEFIT ANALYSIS	16
SURGICAL REMODEL WITH C-ARM FLUOROSCOPY	16
SURGICAL REMODEL WITH CT BUILDOUT	20
COST BENEFIT ANALYSIS CONCLUSION	24
DEMOGRAPHICS AND DEMAND	25
CT IMPLEMENTATION FINANCIAL OUTLOOK	26
CONCLUSION AND RECOMMENDATION	27
APPENDICES	30
APPENDIX A – HARDWARE COSTS BREAKDOWN	30
APPENDIX B – REVENUE ESTIMATE RATIONALE	34
APPENDIX C – FACILITIES ESTIMATE	35
APPENDIX D – LOAN AMORTIZATION SCHEDULE	36
WORKS CITED	36

INTRODUCTION

Dr. Bean, this section summarizes details you already know about the practice, but I've included it here so the analysis is clear for other reviewers and any members of the ownership group who may not be as familiar with our operations.

Ridgeview Veterinary Clinic is a made-up practice and does not represent any real clinic or location.



Ridgeview Veterinary Clinic is located on the north side of Noblesville, Indiana in a dense suburban neighborhood. Ridgeview Clinic was started and built by Dr. Bean in 1990 and continued to grow into a flourishing and respected small animal GP. In 2012, Dr. Bean sold a quarter of her practice to the practice manager who is also one of the RVTs. In 2022, Dr. Luke (the author) joined the team shortly after graduation and bought another quarter of the company from Dr. Bean in 2024.

The practice has a solid reputation and a skilled team that works well together. It currently has three and a half full-time equivalent veterinarians and 12 support staff. The practice is in a strategic location serving the surrounding neighborhoods. The area has seen continued growth and increased demand for veterinary services. The practice is housed in a 3,280 square-foot facility that was remodeled in 2012. There are three exam rooms, a large treatment area, a room for radiographs, a surgical suite with 1 table, and a large boarding and grooming area in the back. The clinic is well-equipped and properly maintained.

Doctor Bios

The clinic has four practicing veterinarians, with a combined 3.5 full-time equivalent (FTE). Dr. Bean works part-time, while Dr. Luke, Dr. Smith, and Dr. Taylor each work full-time.

Dr. Bean is close to retirement but wants to see the practice resolve some key issues before her retirement, so she knows her clients and community are left well served when she is gone. Dr. Bean enjoys wellness visits and sick appointments with her long-established clients. She has stepped down from doing as much surgery outside of an occasional dental or neuter.

Dr. Smith plays a key role in the practice's surgical services. He has been with the practice since 2009, and he brought with him a special interest in orthopedics. Dr. Smith has continued to grow clientele in the area.

Dr. Taylor is a 2015 graduate, most interested in medicine, dentistry and soft tissue surgery. She would like to pursue more soft tissue surgery, but Dr. Smith is the primary surgeon and has priority

FINANCIAL BACKGROUND

for surgery slots. Dr. Taylor has taken over many of Dr. Bean’s old clients who could not fit an appointment during Dr. Bean’s part-time schedule.

I, Dr. Luke, am a 2018 graduate and consider myself a generalist. I enjoy doing a little bit of everything. I want to continue learning orthopedics from Dr. Smith and soft tissue surgery from Dr. Taylor. I have a strong business interest and became an owner shortly after joining the team. Dr. Bean and I have continued to talk about ideas for the practice. My role has included researching and integrating new technologies, which positions me well to evaluate the feasibility of adding fluoroscopy. This report was created at Dr. Bean’s request to evaluate the feasibility of adding fluoroscopy, weighing both the benefits and limitations of this technology against other diagnostic alternatives for Ridgeview Clinic. Dr. Bean often emphasizes the importance of diagnostic imaging, remarking, “Yes, it is true that to cut is to cure, but to image is to know where to cut.”

FINANCIAL BACKGROUND

The financial background of Ridgeview Veterinary Clinic establishes the baseline against which all investment options are evaluated. The 2024 income statement summarizes the clinic’s current revenue streams, operating expenses, and profitability.

Revenue and Expenses

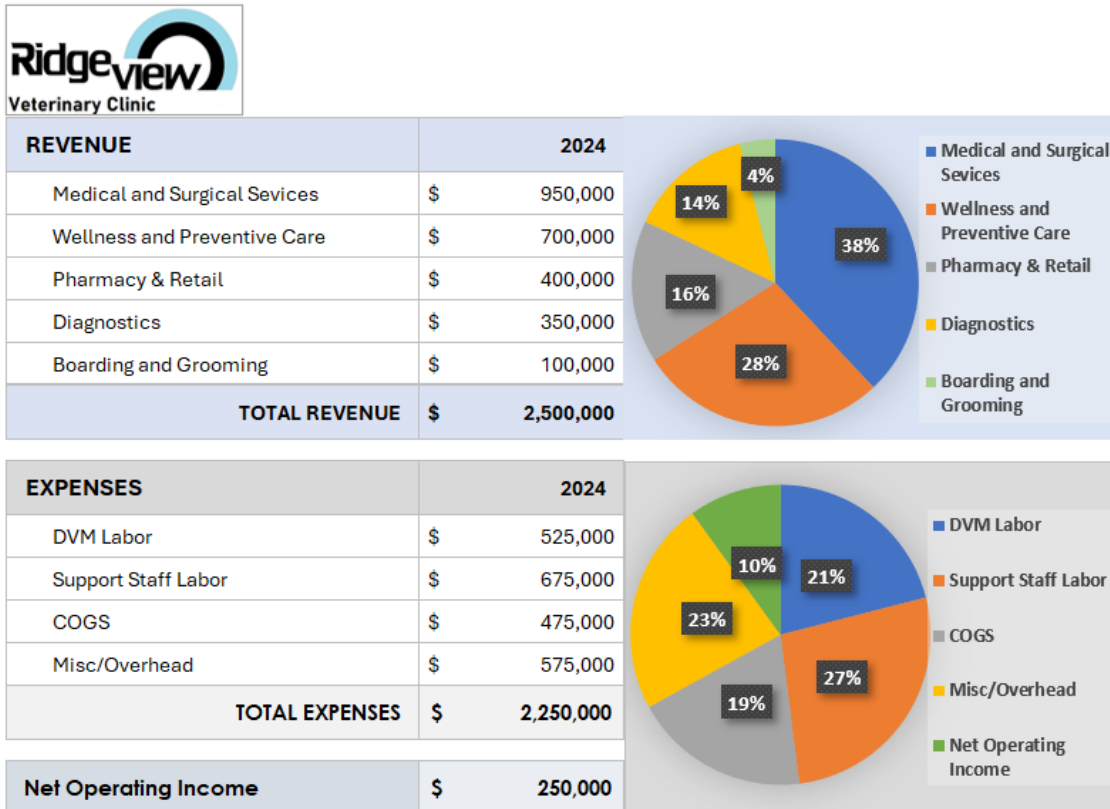


Figure 1.1 – Ridgeview Clinic 2024 Revenue and Expense Overview

Ridgeview Clinic generated \$2.5 million in gross revenue in 2024. One of the primary challenges facing the practice is that it is operating at the limits of its current facility. The clinic has only three exam rooms and a single surgical suite. Appointment and surgery times are constrained, creating daily scheduling competition between doctors and limiting the number of procedures that can be performed. Dr. Smith’s orthopedic caseload often monopolizes the surgery table, reducing availability for Dr. Taylor’s soft tissue cases and leading to underutilization of both her and Dr. Luke’s surgical skills.

Staffing

Boarding staff turnover has been high. This is consistent with the broader staffing shortages faced by the veterinary sector as a whole (“2025 Veterinary Practice Market Outlook - Simmons Inc.,” 2025). Retention of boarding staff has been difficult, as it is the lowest-level position in the clinic. When these roles turn over or boarding staff call out, veterinary assistants are required to step in to cover boarding duties such as walking dogs and cleaning runs. This takes them away from medically focused patient care, which they prefer and are trained to perform. Dr. Bean has emphasized the importance of retaining and investing in experienced RVTs, which are critical to patient care. Ridgeview Clinic’s RVTs are compensated above the Indiana average, (ZipRecruiter RVT Salary in Indiana, August 2025) which helps retention and adds great value to the clinic culture. Boarding is also challenging for staff because peak demand occurs during holidays and school breaks, which are the same times when staff typically request time off.

Each of these factors has contributed to Ridgeview’s limited operating income, but inadequate surgical space has had the greatest impact, keeping profit margins below the 20% industry benchmark. (Veterinary Practice Financial Fitness, Doyle Watson, 2024). The largest expense of the practice is support staff labor, but Dr. Bean is insistent that the solution is not to cut labor costs but rather to increase the revenue through a new service. These workflow and staffing difficulties are the main concerns Dr. Bean wants to address before retirement, consistent with best practices for preparing a practice for transition (“Veterinary Practice Ownership - Leaving a Legacy,” 2015).

Position	Employees (FTE)	Average Salary
Veterinary Technician (RVT)	3	\$ 57,333
Veterinary Assistant	4	\$ 45,000
Client Service Representative	2	\$ 40,000
Boarding/Grooming	3	\$ 38,000

Figure 1.2 – Ridgeview Clinic Support Staff Overview. The full support staff labor cost includes an additional 23.7% of the total salaries which accounts for Payroll Taxes and Benefits.

EXECUTIVE SUMMARY

Opportunity: Ridgeview Veterinary Clinic is a well-established small animal practice in Noblesville, Indiana. The key constraint is its single surgical suite and outdated facility design, which limits case capacity and underutilizes its doctors. The reliance on low-margin services like boarding and grooming has further held margins near 10%, well below the 20% industry benchmark.

Mission: Ridgeview's mission is to serve its community with advanced, high-quality care while cultivating a loyal, enduring workforce and maintaining profitability.

Solution: The proposed solution is to remodel the boarding and grooming area into a surgical suite, including a CT buildout to support higher surgical case volume and improved diagnostic imaging. The new surgical area will help relieve existing bottlenecks and improve workflow throughout the clinic. C-arm Fluoroscopy was first considered, but CT emerged as the natural competitor, and after a detailed feasibility analysis, CT proved to be the stronger option. CT provides broader diagnostic capabilities, thus delivering stronger long-term financial performance.

Market Focus: Ridgeview serves a growing suburban population of 59,000 pet-owning households within eight miles, with a median household income well above the national average. This demographic has strong purchasing power and demand for advanced care, making Ridgeview well-positioned to expand higher-value services.

Competitive Position: Pairing a surgical remodel with CT addresses current bottlenecks and introduces advanced imaging capability. This establishes Ridgeview as a local provider of advanced imaging and surgical services, while enabling its doctors to work at full capacity and supporting sustainable revenue growth.

Expected Returns: The remodel and CT buildout would require a \$637,650 investment, financed by a loan at 7%. The project is expected to take six years to reach full output, at which point the remodel and CT buildout are projected to generate \$370,460 in annual net benefit after accounting for operating costs, staffing changes, and financing costs, yielding an average annual ROI of 21.2% over the six-year period. Margins improve from 10% to nearly 19%, driven by expanded surgical capacity and the new CT revenue stream. This plan secures long-term stability, expands community services, and fulfills Dr. Bean's goal of leaving a modern, thriving practice prior to retirement.

FLUOROSCOPY AND CT OPTIONS

Fluoroscopy is one of the oldest diagnostic imaging techniques, long established in human medicine, but only recently has it begun to find its place in veterinary practice. Its unique advantage lies in providing a continuous “X-ray movie,” giving veterinarians the ability to visualize anatomy and instrumentation in real time. The introduction of portable C-arm units made fluoroscopy practical in surgery and expedited procedures such as orthopedic pin placement. The use of radiopaque contrast has further expanded its role, enabling visualization of the gastrointestinal tract from end to end. Swallow studies, tracheal collapse evaluations, and even myelograms have since found their way into veterinary medicine through this technology.

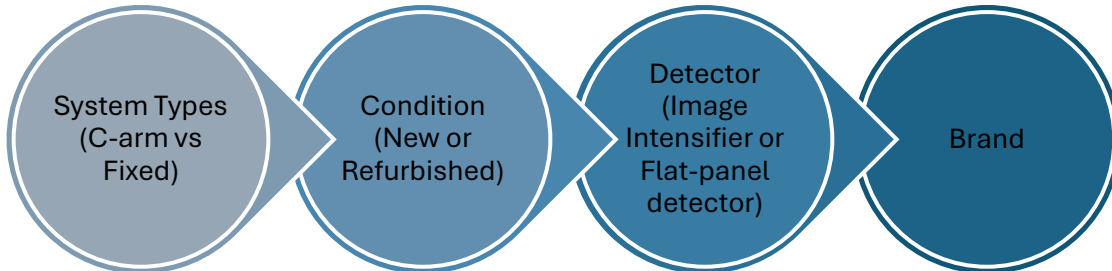
Fluoroscopy use in veterinary medicine has been driven largely by the human medical equipment lifecycle. As hospitals upgrade to newer imaging models, the market becomes flooded with refurbished systems that, while no longer considered standard of care for human medicine, remain highly capable in veterinary settings. This shift has opened opportunities not only in fluoroscopy but also in advanced modalities such as computed tomography (CT).

The idea of a general practice offering CT or fluoroscopy is still impressive to many clients and some veterinarians, but it is becoming increasingly common. CT is among these advanced imaging options and has gained strong traction in recent years in veterinary general practice.

CT has become increasingly popular among veterinarians because of its easy adaptation to skills they already use (*Veterinary CT Imaging Market Size & Share Report, 2025 – 2034*). All veterinarians are trained to interpret radiographs and to think about anatomy in three dimensions. CT builds directly on this training by providing high-resolution, cross-sectional images that can be reconstructed into 3D views, which allow clear visualization of both bone and soft tissue. This makes interpretation intuitive while significantly enhancing diagnostic detail. Today, CT is considered the standard of care at nearly all referral centers across North America. Its widespread adoption and client familiarity position CT as the most relevant alternative to fluoroscopy, making it the natural competitor when evaluating which imaging investment is most feasible for Ridgeview Clinic.

Fluoroscopy Purchase Considerations

The four main decisions when considering fluoroscopy are as follows:



System Type: In the case of Ridgeview Clinic, a mobile C-arm offers a strategic advantage over a fixed fluoroscopy table. C-arms are compact, mobile imaging devices that don't require a dedicated room and can be easily used across multiple surgical locations during procedures. For example, it could support an orthopedic procedure in the morning and then be wheeled to a different room for a swallow study in the afternoon.

Condition: Refurbished C-arms are the standard choice in veterinary medicine. Refurbished machines offer affordability with little change in reliability if the machine is sourced from a reliable provider and serviced regularly.

Detector and Brand: The OEC 9800 by General Electric is widely regarded as a “workhorse” for its steadfast reliability. GE’s large share of the C-arm market means the supply of refurbished OEC 9800s is high, which keeps prices affordable and ensures ready access to parts and service. The OCE 9800s have received strong recommendations from veterinarians and refurbished equipment suppliers (this strong recommendation comes from a variety of conversations with veterinarians and suppliers). This model is priced roughly around \$50,000 (See Appendix A for details), which includes shipping, installation, and basic training. The OEC 9800 offers excellent value. While first released in 1999, it remains a durable and reliable platform with considerable remaining lifespan (*What’s Next for the OEC 9800*).



The OEC 9900 is another option. It introduces flat-panel detector technology, which provides superior image quality compared to the 9800. However, the higher price point of approximately \$75,000 places additional strain on a general practice budget. The improved imaging does not significantly change clinical outcomes for typical GP procedures.

Ultimately, while the OEC 9900 offers technical improvements, Ridgeview’s needs align best with the OEC 9800, which balances affordability, proven reliability, and service support.

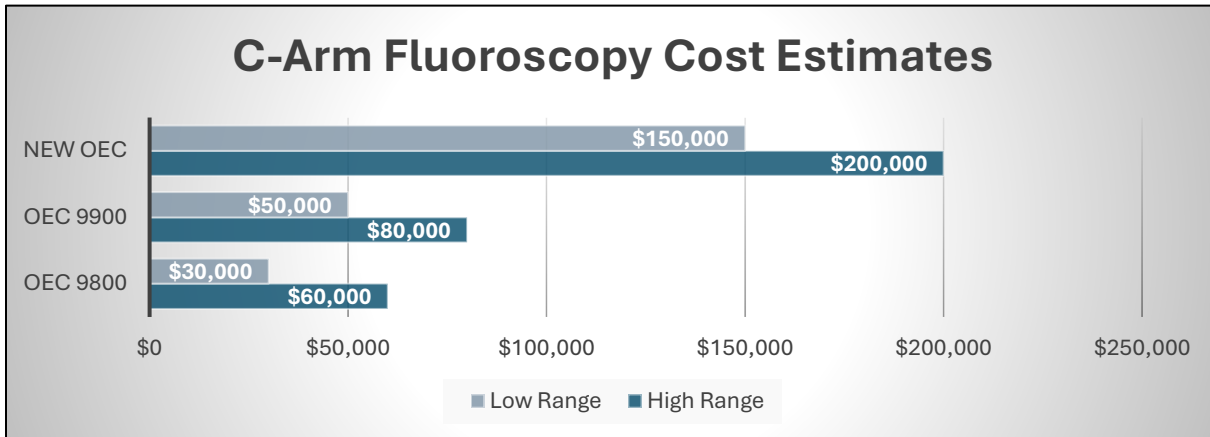
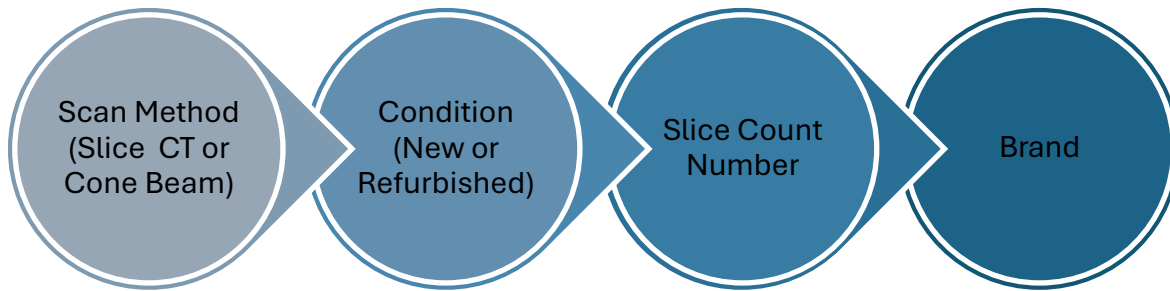


Figure 2.1 – C-Arm Fluoroscopy Cost Estimates. Refurbished OEC 9800 and 9900 models are the most common choices for veterinary practices, with large cost ranges depending on model and vendor. A new OEC unit is available but less common due to its higher cost. See Appendix A for detailed vendor quotes and pricing breakdowns.

CT Purchase Considerations

Purchasing a CT scanner is no simple matter; it is much like buying a house. Key findings and recommendations have been outlined; however, it is essential to recognize that each scanner comes with trade-offs in performance, cost, serviceability, and longevity. Just as the real estate market fluctuates and houses vary widely in age and condition, the CT market shifts rapidly, with each unit reflecting different levels of wear, service history, and technological updates. For these reasons, no single recommendation can be universally applied. Instead, this report should serve as a guide to help frame the decision-making process. Consulting with veterinarians who own CTs along with board-certified radiologists is a critical step to ensure that the scanner selected aligns with both the clinical and business needs of the practice at the time of purchase.

The four main decisions when considering CT are as follows:



Scan Method: A conventional fixed-slice CT is recommended for Ridgeview Clinic. This option provides better image quality, especially for soft tissue, where contrast resolution and reduced motion artifact are critical (‘How Much Does a Veterinary CT System Cost? | Antech Diagnostics’). Considerations for this option must take into account the clinic’s case load. Soft tissue cases represent a major source of revenue, with Dr. Taylor and Dr. Luke handling the majority of them, while Dr. Bean and Dr. Smith occasionally step in. Veterinary imaging experts agree that conventional CT is the best choice for general medicine and surgery, and it has a wider range of applications than cone beam (‘Cone Beam or Conventional CT’). VIN (Veterinary Information Network) discussions also point out that specialists are much more willing to interpret slice CT scans, while cone beam studies are often turned away (‘VIN Rounds’).

Condition: A refurbished CT is the most practical option since it’s more affordable without giving up reliability. These scanners are retired from human hospitals, inspected, repaired if needed, and then resold with a one-year warranty that usually includes shipping and installation. Many veterinary clinics have had long-term success using refurbished CTs.

Slice Count: Slice count refers to the number of image slices a CT scanner can acquire with each rotation, directly affecting image resolution, speed, and diagnostic capability. Slice count is a primary measure of how advanced a CT unit is and directly reflects the level of diagnostic detail it can provide. Some veterinarians work with 1-, 4-, or 8-slice units, but a 16-slice scanner is generally considered gold standard in veterinary practice. A 64-slice system is regarded as research-level. For Ridgeview, an 8- or 16- slice unit would provide the right mix of image quality and cost. This would allow for diagnoses of the vast majority of conditions encountered in a general practice, including nasal disease, thoracic metastasis checks, fracture planning, and abdominal mass evaluation. Both 8-slice and 16-slice provide more



Canon Aquilion 16 oncologysystems.com

than adequate image quality for clinical decision making without the steep costs associated with higher-end 32- or 64-slice systems. Refurbished 8- and 16-slice units are widely available in the veterinary market and cost around \$190,000. While still a significant investment, this is an attainable option for practices wanting advanced imaging capability. (See Appendix A for the market research on the specific models and prices associated with them).

Brand: Selecting a company that has a strong presence in the U.S. makes service and parts more available and affordable. GE is a strong contender, with many VIN users reporting reliable service for refurbished systems. Canon also has a reputation for high part availability and affordability. The recommendation of GE or Canon was further reinforced during a conversation with Alan Moretti, VP of Strategic Business Development at Radiology Oncology Systems, a major supplier of refurbished CT systems. He said both of these companies tend to be best for veterinarians because of their great support and product servicing.



GE Lightspeed blockimaging.com

Ridgeview’s needs are best served by a refurbished 8- or 16- slice CT from GE or Canon. It balances affordability, proven diagnostic capability, and long-term service support, making it the most practical and financially sound choice for the clinic. Next, careful consideration will be given to how advanced imaging can be effectively integrated into Ridgeview’s clinic layout.

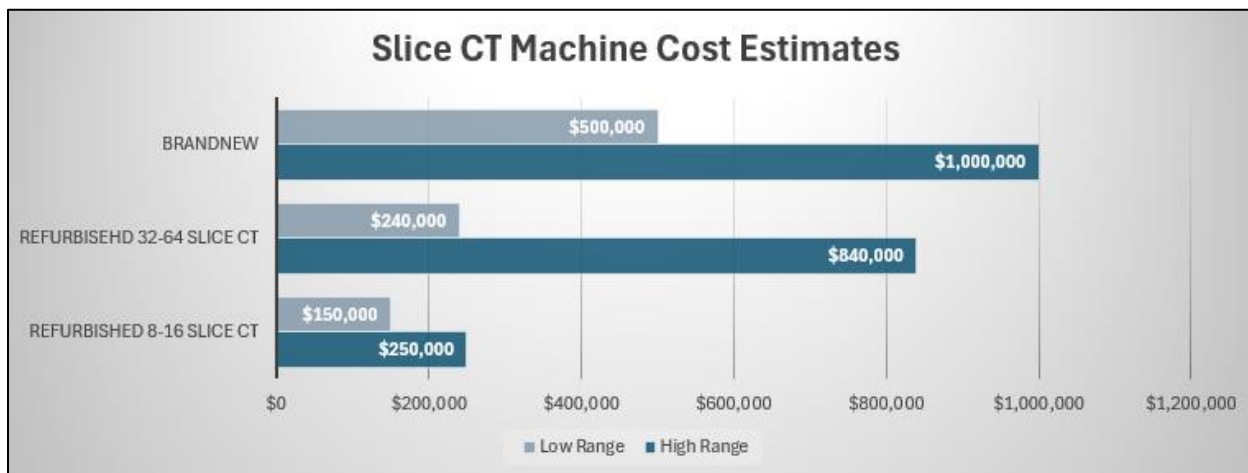


Figure 2.2 – Slice CT Machine Cost Estimates. Refurbished CT systems are available in a wide range of configurations, with costs varying significantly depending on slice capacity and vendor. New CT machines are available but are rarely purchased in general practice due to their substantially higher upfront cost.

CLINIC LAYOUT AND ADVANCED IMAGE INTEGRATION

Current Clinic Layout

Ridgeview Clinic occupies a 3,280-square-foot facility with three exam rooms, a treatment area, radiology space, and a single-table surgical suite. A large portion of the building is actively dedicated to boarding and grooming services, which take up valuable square footage that could otherwise support medical operations.

This layout creates clear limitations. Surgical capacity is restricted by the single operating table, which leads to scheduling bottlenecks and lower overall surgical productivity for doctors. Significant floor space is tied to grooming and boarding, representing both a challenge and an opportunity as the clinic evaluates how to increase its revenue and support a greater caseload.

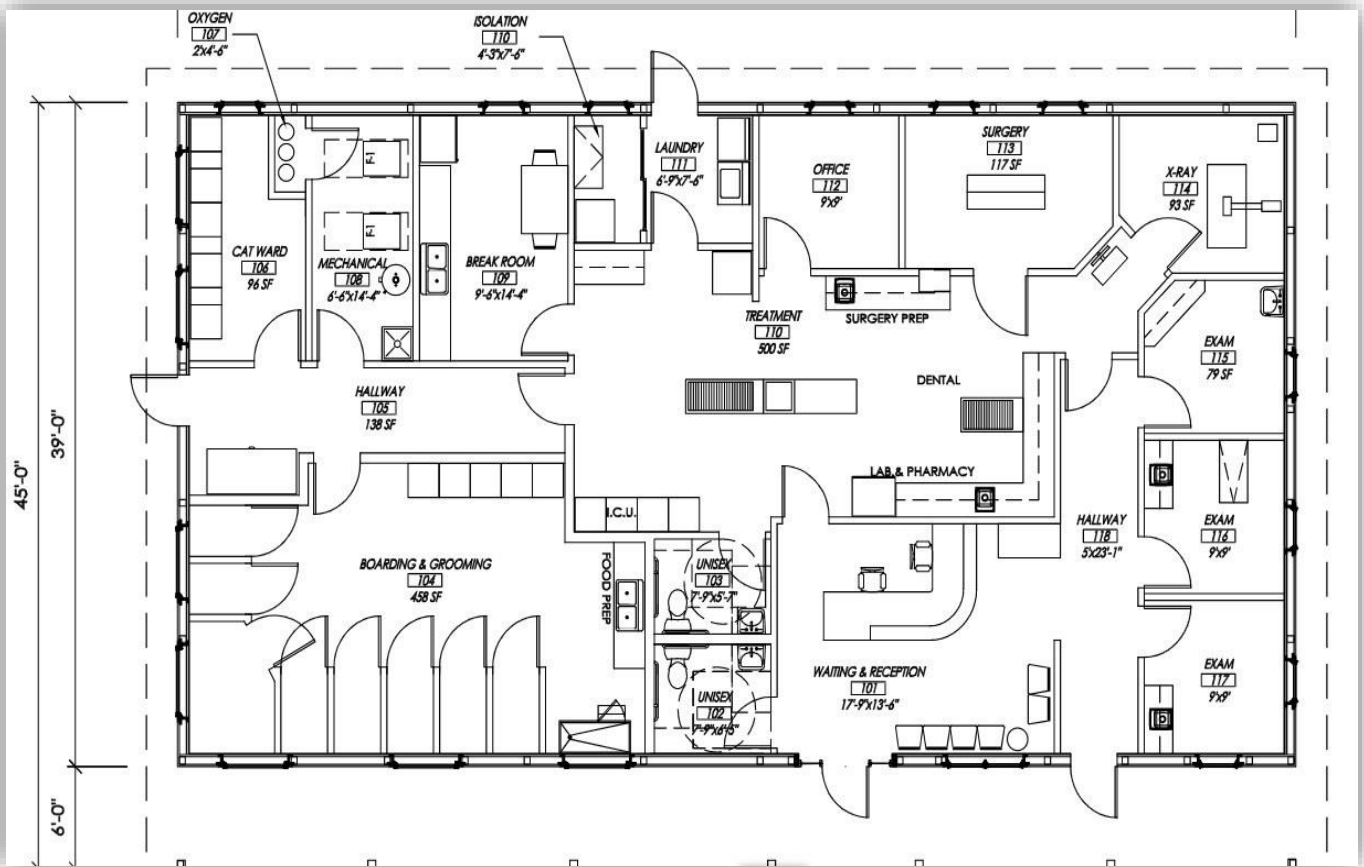


Figure 3.1 – Current Ridgeview Clinic Layout. Note the large boarding and grooming area (458 SF) and Limited Surgery Area (117 SF) with one table. Photo used with permission courtesy of Morton Buildings, Inc.

Surgical Remodel with C-arm Fluoroscopy

This proposed remodel repurposes the low-revenue boarding and grooming area into a high-value medical care space. The remodel adds a surgical suite and a new surgery prep room. This new space will generate high revenue services by leveraging the skills of the current veterinarian staff while also greatly reducing staffing challenges associated with kennel operations. The new surgery space would function as the ‘clean’ suite, primarily used for orthopedic procedures where the C-arm would provide the greatest value, as well as clean soft tissue surgeries. The original surgery space could then serve as a ‘dirty’ suite for procedures such as pyometra surgeries or foreign body removals. If needed, the mobile C-arm could also be wheeled into this room, maximizing its utility across a wide range of procedures. By removing boarding and grooming and converting the space into a surgical area, the clinic can optimize its layout and create additional room for core medical functions. This will create more doctor hours spent in the operating room, freeing up exam rooms for RVT appointments, routine follow-ups, and infectious disease cleaning protocols when necessary. This reallocation of space helps ease congestion in the treatment area, which previously served as overflow due to limited exam room availability. The result is a more streamlined workflow and an expansion of Ridgeview’s diagnostic and surgical capabilities.

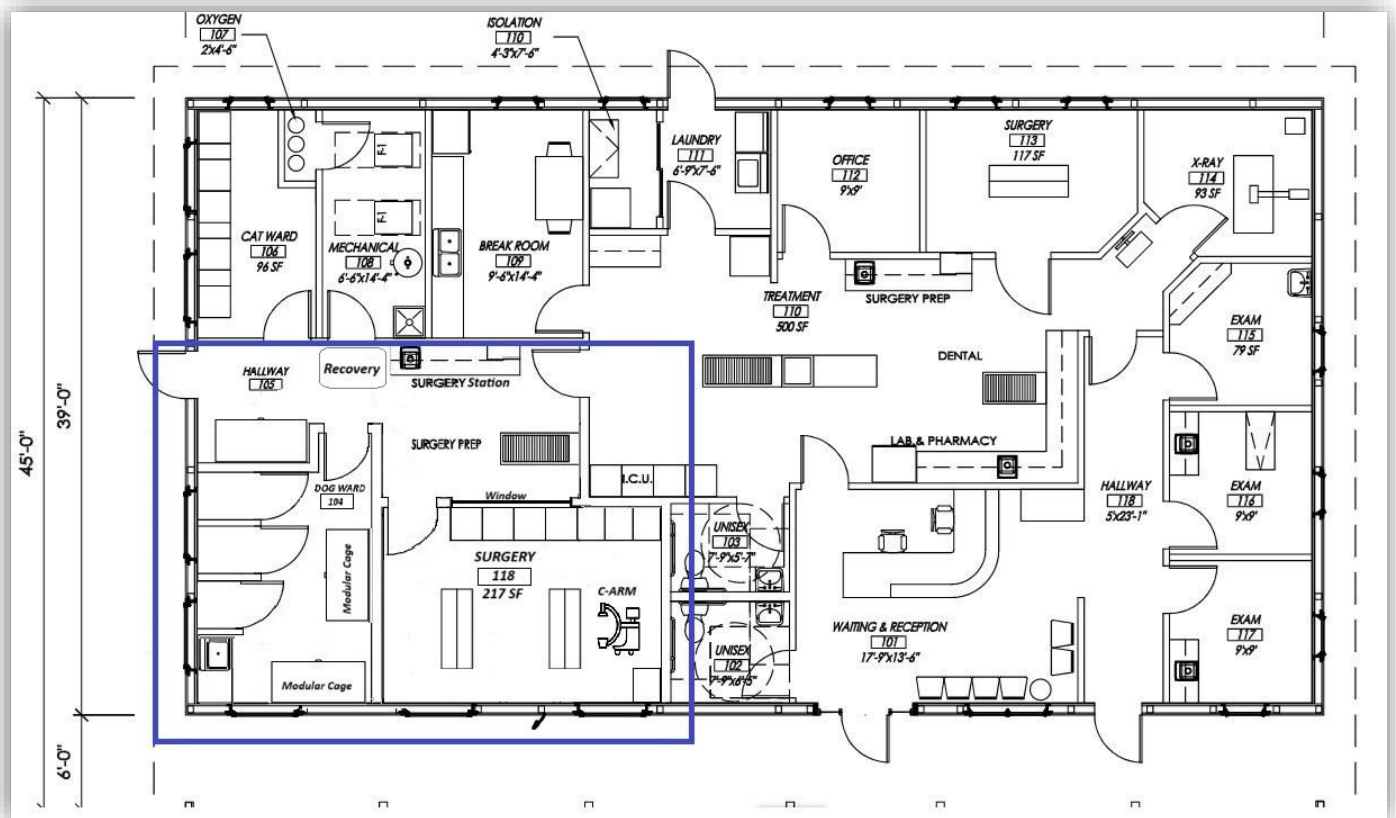


Figure 3.2 – Proposed Ridgeview Clinic Surgical Remodel with C-arm Fluoroscopy. Blue box denotes the area of change. An additional surgery station which contains an autoclave, a scrub sink, and pack wrapping supplies is added in the hallway. Boarding and grooming will be split in half and changed into a Dog Ward on one half (194 SF). The other half is now a surgery prep which was combined with the hallway and surgery suite (217 SF) separated by a large, sealed window. The surgery suite is equipped with two surgery tables and a mobile C-arm unit. Photo courtesy of Morton Buildings, Inc. Layout edits in blue square designed by Dr. Luke.

Surgical Remodel and CT Buildout

This next proposed remodel also eliminates boarding and grooming to expand surgical capacity with a new prep room and larger surgery suite. In addition, it includes the construction of a dedicated CT suite with a scan room and control room built through the existing radiology area, while staying within the property boundaries. The fluoroscopy remodel focuses on intraoperative imaging, while the CT buildout represents pre-op advanced diagnostic imaging capability. This alternative provides a different path forward for Ridgeview, addressing the same space challenges while reshaping the clinic’s overall diagnostic and surgical capacity.

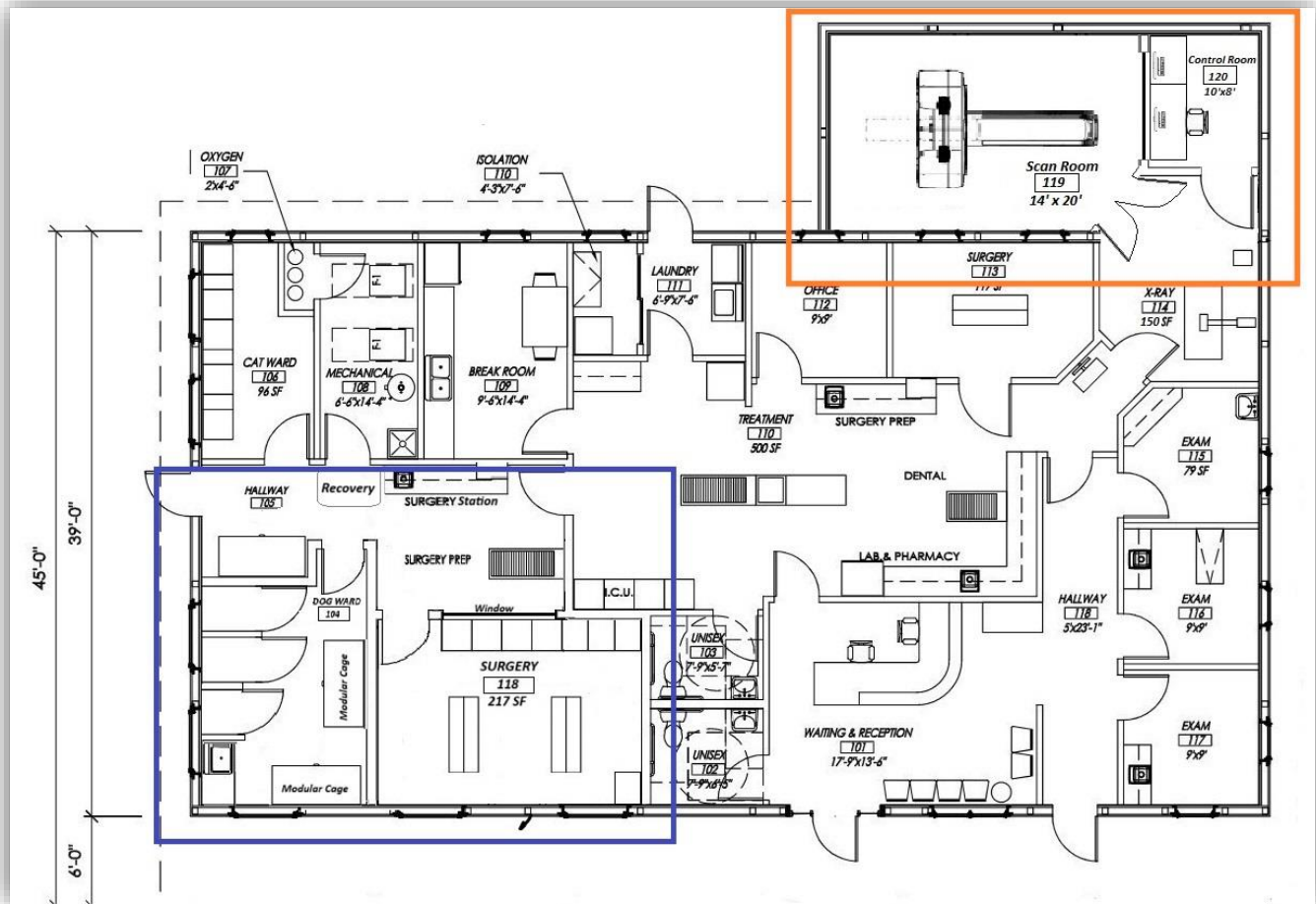


Figure 3.3 – Proposed Ridgeview Clinic Surgical Remodel and CT Buildout. Blue box denotes the area of change, similar to figure 3.2 except the C-arm has been removed. The orange box shows the area of a CT buildout. The CT build contains a scan room which is accessed through a set of double doors (280 SF) and a control room (80 SF) of the recommended size, according to industry experts. Both rooms are accessible through the existing X-ray area. Photo courtesy of Morton Buildings, Inc. Layout edits in blue and orange square designed by Dr. Luke.

COST BENEFIT ANALYSIS

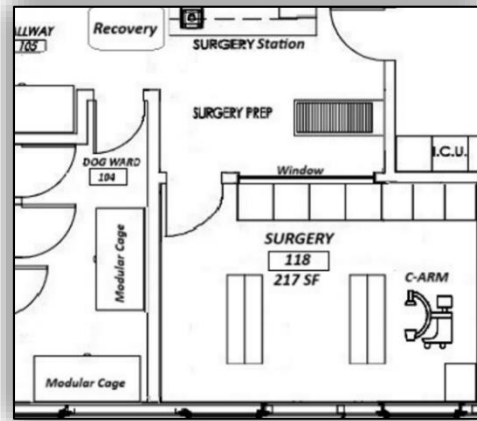
The following cost–benefit analysis compares two investment paths as outlined above. In both scenarios, the practice undertakes a surgical remodel (seen in the blue box) to expand from one to two operating rooms, which will increase surgery table availability. The key difference is in the advanced imaging paired with that remodel: one option integrates a C-arm fluoroscopy (Figure 3.2), while the other builds out a dedicated CT area (Figure 3.3).

Surgical Remodel with C-arm Fluoroscopy

- 1) Project Costs
- 2) Operating Costs
- 3) Benefits

1) PROJECT COSTS FOR C-ARM INTEGRATION

C-Arm Project Costs, Table 4.1	
Services	\$2,828
Hardware	\$128,000
• General Surgical Remodel Hardware	\$72,338
• OEC 9800	\$50,000
Facilities	\$122,500
Training	\$500
Contingency (Risk)	\$17,123
Website and Marketing	\$25,000
Total Project Cost	\$295,951



The C-arm machine accounts for 17% of the total project cost.

Assumptions and Notes	
Services <ul style="list-style-type: none"> • 7% Architectural Fees 	Facilities <ul style="list-style-type: none"> • See Appendix A for remodel quote
Hardware – See Appendix A <ul style="list-style-type: none"> • General Surgery Remodel Hardware • Fluoroscopy Specific Hardware (e.g. lead gowns) • OEC 9800 C-arm Machine 	Contingency (Risk) <ul style="list-style-type: none"> • 10% added as recommended by various sources (<i>Managing the contingency allowance AIA</i>)
	Other Costs <ul style="list-style-type: none"> • Marketing and Website Updates
	Software Tools (Included with C arm)

2) ANNUAL OPERATING COST FOR C-ARM

Annual Operating Cost Changes, Table 4.2	
DVM Labor – no change	\$0
Support Staff Labor	+\$7000
COGS	+\$1000
Misc/Overhead	+\$4200
Total Annual Operating Cost Change	+\$12,200

C-arms have relatively low maintenance costs.

Assumptions and Notes	
Support Staff Labor <ul style="list-style-type: none"> Due to the removal of grooming and boarding, one kennel position will be changed to a veterinary assistant position. This veterinary assistant will help with the flow of increased surgery-related tasks. 	Misc/Overhead <ul style="list-style-type: none"> Annual maintenance contract: \$4,000, covers preventive service, calibration, most repairs (<i>'Hidden Costs of Buying New C-Arm', 2025</i>), Indiana requires an inspection every other year (Regulation, 2025), cost around \$200.
COGS <ul style="list-style-type: none"> Consumables: (contrast agents, sterile drapes, lead aprons, etc) 	<ul style="list-style-type: none"> Software license/updates: Often included Utilities: Negligible increase

3) C-ARM BENEFITS

Revenue for C-arm Project, Table 4.3	
Category	Amount
Surgical Revenue	\$140,160
Fluoroscopy Revenue	\$79,200
Boarding Cost Avoidance	\$13,500
Boarding/Grooming Loss	(\$100,000)
Net Change	\$132,860

In Table 4.3, the revenue changes are presented by category. The subsequent charts provide the rationale supporting these projections, with Table 4.4 outlining the anticipated increase in surgical revenue and Table 4.5 detailing the projected utilization of C-arm fluoroscopy. Collectively, these tables explain the foundation for the adjustments incorporated into the revenue calculations.

COST BENEFIT ANALYSIS

Revenue for Surgery Increase, Table 4.4				
Doctor	Monthly Increase	Rationale	Average Revenue per Surgery	Increased Monthly Revenue
Dr. Smith	+5	More capacity for orthopedic surgeries than before.	\$1,000	\$5,000
Dr. Taylor	+8	Gains the reduced bottlenecks; soft tissue expands	\$600	\$4,800
Dr. Luke	+6	Able to handle a wider surgical mix after remodel.	\$700	\$4,200
Dr. Bean	+3	Small increase; benefits from easier scheduling despite part-time status.	\$200	\$600
Surgical Increase Annual Revenue: *\$140,160				

Table 4.4 – Projected Surgical Revenue Increase with Surgical Remodel. The remodel allows for greater surgical load and expanding the case mix across all doctors. Monthly increases in surgical cases are shown with associated rationale and estimated revenue. See Appendix B for further estimation rationale. *In this calculation 20% was taken from increased surgical revenue to account for lost appointments that would have been normally scheduled prior to the remodel, this estimate was made by understanding revenue per unit of time (e.g., a two-hour surgery at \$1,000 versus four 30-minute appointments generating \$400).

Fee Rationale
<p>C-arm Fluoroscopy Fee: \$550</p> <p>This is a flat fee for fluoroscopy, set at a level consistent with general practice use. It is supported by Dr. Steven Garner, a practice owner at Safari Vet Center who frequently utilizes fluoroscopy and charges \$600, as well as comparable industry averages. A fee of \$550 was selected as a competitive and sustainable charge for Ridgeview.</p>

Projected Utilization of C-Arm Fluoroscopy, Table 4.5				
System	Procedure	Monthly Frequency	Rationale	Increased Monthly Revenue
Orthopedics	Fracture repair, close pinning technique, screw placement confirmation	6	Dr. Smith takes on more ortho cases; Dr. Luke is also training under him. Fluoroscopy assists in pin placement during surgery.	\$3,300
Respiratory	Tracheal collapse diagnosis	2	Dr. Taylor, able to make diagnosis often referred for stent placement.	\$1,100
GI	Swallow studies, FB diagnosis, Hiatal hernias	2	FB Diagnosis can often be done with rads. Still useful for megaesophagus or motility diagnoses.	\$1,100

COST BENEFIT ANALYSIS

Urinary	Urolith management	1	Managed in-house; improved with C-arm guidance. Can see cystine stones with dye.	\$550
Rarer Cases	Upper urinary stones, Ectopic Ureter, PRAA, CSF collection,	1	Can be for diagnosis advanced cases rarely treated in-house; diagnosis still possible before referral.	\$550
				Fluoroscopy Annual Revenue: \$79,200

Table 4.5 – Projected Case Utilization of C-Arm Fluoroscopy. The majority of added cases are orthopedic procedures where intraoperative imaging improves efficiency and accuracy. While fluoroscopy supports some soft tissue and diagnostic applications, it is limited in a GP setting. See Appendix B for further estimation rationale.

Year	O&M Cost	Loan Payments (Loan for 295K)	% of Target Output	Revenue	Gain
2026	\$12,200	\$61,996	10%	\$13,286	\$(60,910)
2027	\$12,200	\$61,996	33.0%	\$43,844	\$(30,352)
2028	\$12,200	\$61,996	66.0%	\$87,688	\$13,492
2029	\$12,200	\$61,996	75.0%	\$99,645	\$25,449
2030	\$12,200	\$61,996	95.0%	\$126,217	\$52,021
2031	\$12,200	\$61,996	100.0%	\$132,860	\$58,664

Fluoroscopy + Surgery Remodel 6-Year Summary	
Average annual total revenue	\$83,923
Average annual cost	\$74,196
Average annual gain	\$9,727
Return on Investment (ROI)	13.1%

This ROI analysis incorporates a gradual ramp-up of revenue over six years. O&M costs, summarized in Table 4.2, are projected to remain stable throughout the project period. Target output is expected to increase steadily as caseload builds with the adoption of the new services, reaching full utilization by 2031. Over the six-year period, the project is projected to generate an average annual ROI of 13.1%. ROI is calculated as average annual gain divided by average annual cost, providing a realistic reflection that accounts for gradual ramp-up and financing costs.

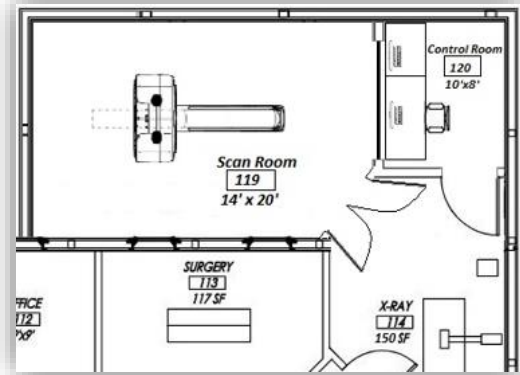
To clarify how these financing costs are incorporated, the following assumptions are applied: Ridgeview will finance the full project cost of \$295,951 (Table 4.1) through a loan. Repayment will be structured as equal annual installments over six years at a 7% interest rate, with each payment covering both principal and interest. While many ROI analyses exclude financing costs, this report includes interest expense to reflect the true cost of borrowing, resulting in a more conservative ROI. The full amortization schedule, provided in Appendix D, details the breakdown of principal and interest included in each payment.

Surgical Remodel with CT Buildout

- 1) Project Costs
- 2) Operating Costs
- 3) Benefits

1) PROJECT COSTS FOR CT INTEGRATION

Surgical Remodel with CT Buildout Costs, Table 5.1	
Services	\$13,149
Hardware	\$277,293
• CT Machine	\$190,000
• General Surgery Remodel Hardware	\$73,338
Facilities	\$262,200
• CT Buildout	\$137,200
• Surgical Remodel	\$122,500
Training	\$7,500
Contingency (Risk)	\$52,508
Website and Marketing	\$25,000
Total Project Cost	\$637,650



The CT Machine itself accounts for ~1/3 of the total project cost.

Assumptions and Notes	
<p>Services</p> <ul style="list-style-type: none"> • 7% architectural fees <p>Hardware – See Appendix A</p> <ul style="list-style-type: none"> • General surgery remodel hardware • Refurbished 8- or 16- slice CT machine • CT specific hardware (e.g. Server Rack) <p>Facilities</p> <ul style="list-style-type: none"> • See Appendix C for remodel quote details 	<p>Training</p> <ul style="list-style-type: none"> • Atlantis Worldwide recommended three days training which costs \$2,500 a day • Additional radiation safety training is free (UN Global Surgery) <p>Contingency (Risk)</p> <ul style="list-style-type: none"> • 10% added as recommended by various sources (<i>Managing the contingency allowance</i> AIA)

2) ANNUAL OPERATING COST FOR CT

Annual Operating Cost Changes, Table 5.2	
DVM Labor – no change	\$0
Support Staff Labor	+\$7000
COGS	+\$2000
Misc/Overhead	+\$50,300
• Service Contract	+\$45,000
Total Annual Operating Cost Changes	+\$59,300

The service contract makes up the vast majority of CT operation cost

Assumptions and Notes	
<p>Support Staff Labor</p> <ul style="list-style-type: none"> Due to the removal of grooming and boarding one kennel position will be changed to a veterinary assistant position. This veterinary assistant will help with the flow of increased surgery-related tasks. <p>COGS</p> <ul style="list-style-type: none"> Consumables: (contrast agents) 	<p>Misc/Overhead –</p> <ul style="list-style-type: none"> Service Contract: \$45,000, Jim McCay from MXR imaging Software license/updates, picture storage: \$3,570 Utilities: \$1,730 (50 kWh per day × 250 days * \$0.1384/kWh)

3) CT BENEFITS

Revenue for CT Project, Table 5.3	
Category	Amount
Surgical Revenue	\$140,160
CT Revenue	\$316,800
Boarding Cost Avoidance	\$13,500
Boarding/Grooming Loss	(\$100,000)
Net Change	\$370,460

In Table 5.3, the revenue changes are presented by category. The subsequent charts provide the rationale supporting these projections, with Table 5.4 outlining the anticipated increase in surgical revenue and Table 5.5 detailing the projected utilization of CT. Collectively, these tables explain the foundation for the adjustments incorporated into the revenue calculations.

COST BENEFIT ANALYSIS

Revenue for Surgery Increase, Table 5.4				
Doctor	Monthly Increase	Rationale	Average Revenue per Surgery	Increased Monthly Revenue
Dr. Smith	+5	More capacity for orthopedic surgeries than before.	\$1,000	\$5,000
Dr. Taylor	+8	Gains the reduced bottlenecks; soft tissue expands	\$600	\$4,800
Dr. Luke	+6	Able to handle a wider surgical mix after remodel.	\$700	\$4,200
Dr. Bean	+3	Small increase; benefits from easier scheduling despite part-time status.	\$200	\$600
Surgical Increase Annual Revenue: *\$140,160				

Table 5.4 – Projected Surgical Revenue Increase with Surgical Remodel. The projected surgical revenue increase is kept the same as in the fluoroscopy scenario to allow a fair comparison. Although CT may ultimately increase the average revenue per surgery and expand the surgical caseload by identifying additional candidates, the same baseline projections were applied in both cases. *In this calculation 20% was taken from increased surgical revenue to account for lost appointments that would have been normally scheduled prior to the remodel; this estimate was made by understanding revenue per unit of time (e.g., a two-hour surgery at \$1,000 versus four 30-minute appointments generating \$400).

CT Fee Rationale
CT Fee: \$1,200
This reflects bundled private practice pricing, consistent with rates charged by two independent general practices (\$1,200–\$1,500). Referral centers often charge significantly more, but \$1,200 was selected as a realistic and competitive fee for Ridgeview.

Projected CT Utilization, Table 5.5				
System	Procedure	Frequency (Monthly)	Rationale	Increased Revenue (Monthly)
Orthopedics	Complex fractures (skull, pelvis, joints), Fracture planning, Elbow dysplasia, Subtle bone lesions	5	Most orthopedic procedures do not use CT.	\$6,000
Dental & Skull (Nasal/Ear/Sinus)	Dental disease (feline resorption, Periapical abscesses), Nasal tumors, Chronic rhinitis, Otitis media, Sinus disease	8	Commonly used for dentals. Nasal/oral disease	\$9,600
Thoracic	Pulmonary nodules, Mediastinal masses, Metastatic screening, Lung lobectomy planning, or as part of a thoracic rule-out evaluation	4	Great for small thoracic lesions; improves surgical plan.	\$4,800

COST BENEFIT ANALYSIS

Abdominal	Hepatic, Splenic, Renal, or Adrenal masses; or as part of abdominal rule-out evaluation	4	Provides 3D image of masses and vascular improves surgical planning.	\$4,800
Neurology	IVDD with mineralization, Vertebral fractures, Bony spinal tumors	1	Not a focus area for this practice; CT provides diagnosis to guide referral	\$1,200
CT Annual Revenue: \$316,800				

Table 5.5 – Projected CT Utilization. The projected distribution reflects the caseload and strengths of this practice. Soft tissue and dental make up the largest share. Orthopedics contribute a few each month.

Year	O&M Cost	Loan Payments (Loan for 637K)	% of Target Output	Revenue	Gain
2026	\$59,300	\$133,776	10%	\$37,046	\$(156,030)
2027	\$59,300	\$133,776	33%	\$122,252	\$(70,824)
2028	\$59,300	\$133,776	66%	\$244,504	\$51,428
2029	\$59,300	\$133,776	75%	\$277,845	\$84,769
2030	\$59,300	\$133,776	95%	\$351,937	\$158,861
2031	\$59,300	\$133,776	100%	\$370,460	\$177,384

CT + Surgery Remodel 6-Year Summary	
Average annual total revenue	\$234,007
Average annual cost	\$193,076
Average annual gain	\$40,931
Return on Investment (ROI)	21.2%

This ROI analysis incorporates a gradual ramp-up of revenue over six years. O&M costs, summarized in Table 5.4, are projected to remain stable throughout the project period. Target output is expected to increase steadily as caseload builds with the adoption of the new services, reaching full utilization by 2031. Over the six-year period, the project is projected to generate an average annual ROI of 21.2%. ROI is calculated as average annual gain divided by average annual cost, providing a realistic reflection that accounts for gradual ramp-up and financing costs.

In order to clarify how these financing costs are incorporated, the following assumptions are applied: Ridgeview will finance the full project cost of \$637,650 (Table 5.1) through a loan. Repayment will be structured as equal annual installments over six years at a 7% interest rate, with each payment covering both principal and interest. While many ROI analyses exclude financing costs, this report includes interest expense to reflect the true cost of borrowing, resulting in a more conservative ROI. The full amortization schedule, provided in Appendix D, details the breakdown of principal and interest included in each payment.

Cost Benefit Analysis Conclusion

When comparing the two advanced imaging options, the C-arm fluoroscopy remodel requires less than half the upfront capital of a CT buildout (\$296k vs. \$638k) and incurs far lower annual operating costs (\$12k vs. \$60k). This makes fluoroscopy the less financially risky choice, with a smaller total cost of ownership over six years (\$369k vs. \$994k).

Scenario	Current	C-Arm + Surgical Remodel	CT Buildout + Surgical Remodel
Project Cost	-	\$295,951	\$637,650
Total Loan Interest Cost	-	\$77,693	\$165,006
Annual Operating Cost	\$2,250,000	\$2,262,200	\$2,309,300
Annual Revenue	\$2,500,000	\$2,632,860	\$2,870,460
Net Gain at 100% Output	-	\$120,660	\$310,730
ROI	-	13.1%	21.2%

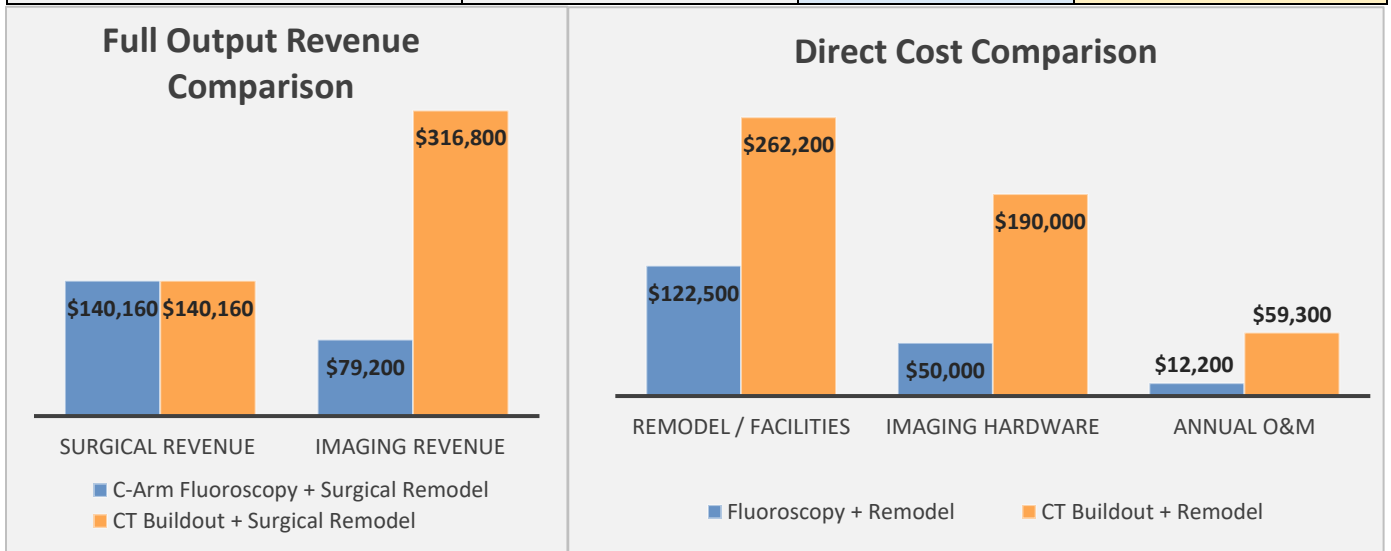


Figure 6.3 – CT generates 4x the imaging revenue of fluoroscopy. Surgical revenue in this report was assumed to be the same.

Figure 6.2 - CT requires over 2x the remodel cost, nearly 4x the hardware cost, and 5x the annual O&M of fluoroscopy.

CT generates substantially higher long-term returns. At full utilization, the CT project is projected to net approximately \$310k annually, compared to about \$120k for fluoroscopy. The above figures show that CT produces more than double the annual net benefit, even considering CT’s higher operating costs. Surgical revenue was held constant across both scenarios for comparability, but the estimates of additional revenue from CT are modest. In practice, CT would likely expand surgical cases further, generating greater revenue and net benefit than reported here and offering more upside than fluoroscopy.

The key difference in ROI is significant, with fluoroscopy at 13.1% compared to 21.2% for CT, demonstrating how the larger investment in CT is offset by greater long-term gains. In each scenario, ROI incorporates a ramp-up period to reflect gradual adoption of new services and also includes interest costs to provide a realistic financial model. In addition, ROI is presented over a six-year loan period even though the useful life of the equipment will likely extend beyond that timeframe. Both the CT unit and fluoroscopy system could be expected to function for eight or more years, and the surgical remodel itself will last far longer, meaning the long-term financial return is likely understated in this analysis.

DEMOGRAPHICS AND DEMAND

Demographic information and demand are important factors when evaluating whether an area remains a strategic place for further investment. The population in the surrounding Noblesville area has grown steadily, increasing from 51,969 in 2010 to 71,940 in 2023 (U.S. Census Bureau). This growth represents a larger potential client base for advanced diagnostic services and referral opportunities to Ridgeview. The 2023 median household income was \$102,319, which is \$21,000 higher than the national average which indicates strong purchasing power for elective and advanced veterinary care (U.S. Census Bureau). The median age in the area is 35.6 years, compared to the national median of 39.0. This younger demographic is significant, as younger households are more likely to have multiple pets and have a higher willingness to invest in advanced diagnostics and surgical care (Urban and Zebra). Noblesville is located on the north side of Indianapolis, giving Ridgeview proximity to a major metropolitan population center while also being part of one of the more affluent regions of the state. Within an 8-mile service radius, there are an estimated 59,800 pet-owning households, representing over 95,000 companion animals. This population represents a significant opportunity to expand access to advanced surgical and diagnostic services at Ridgeview Clinic.

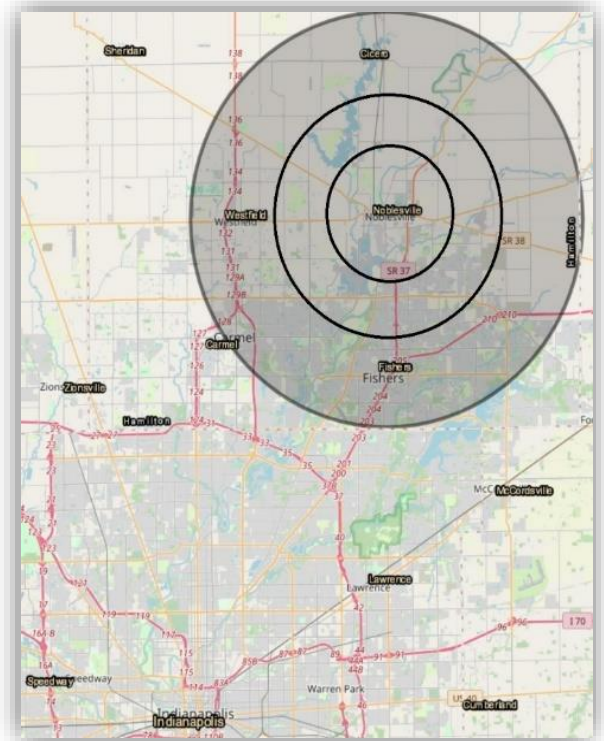


Figure 7.1 shows Noblesville, Indiana in relation to Indianapolis. The largest in circle is 8 miles (Population of 241K or 88k households), the middle is 4 miles (Population of 65K or 23K households), the smallest is 2 miles (Population of 24K or 8.6K households). These circles define Ridgeview’s core service areas.

CT IMPLEMENTATION FINANCIAL OUTLOOK

Ridgeview is positioned to serve a growing market by offering advanced diagnostics along with expanded surgery capabilities. The surgical remodel, along with the addition of CT services, offers a pathway to tap into this market by adding new services valued by the community. CT creates a new high-value diagnostic stream while also supporting surgical growth through improved preoperative planning and case selection. Just as importantly, the remodeled surgical suite allows Dr. Taylor’s and Dr. Luke’s surgical skills to be fully utilized, while Dr. Smith’s orthopedic caseload can be accommodated without monopolizing the suite. The in-house CT allows faster diagnosis and treatment without referral delays. The result is broad-based revenue growth across both imaging and surgery, rather than diagnostics alone.

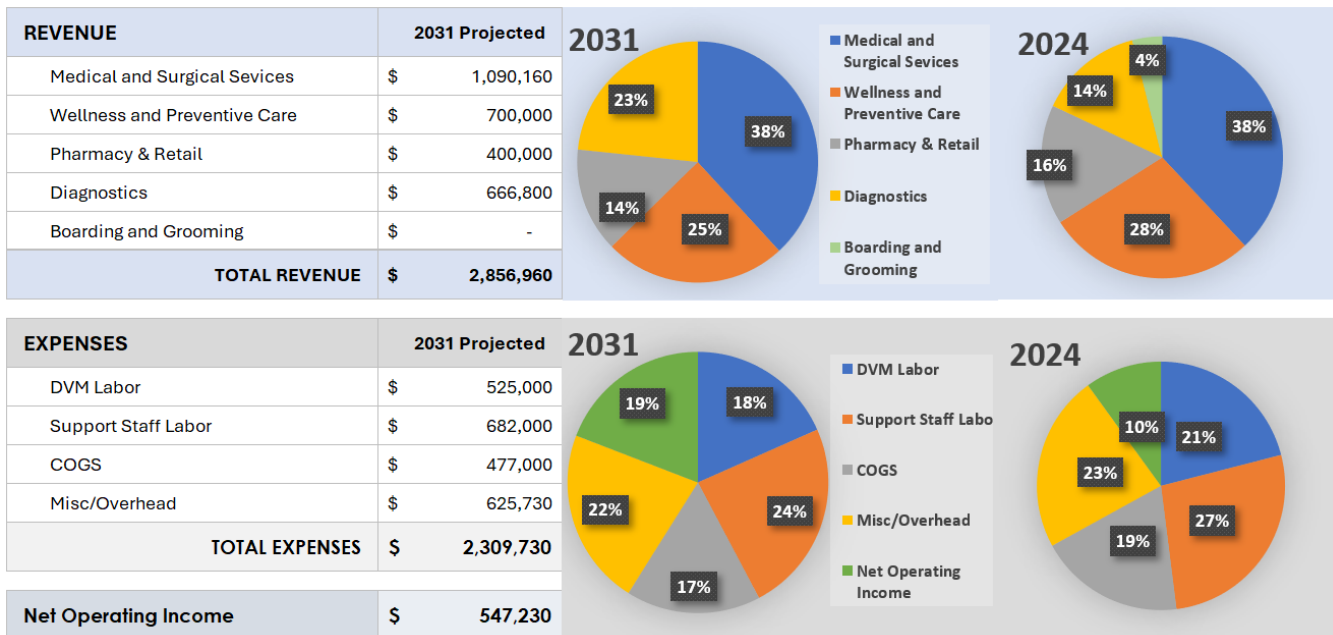


Figure 8.1 Ridgeview Clinic Financial Mix: 2024 Current vs. 2031 Projected with CT and Surgical Remodel: CT and the surgical remodel expand surgical and diagnostic revenue while eliminating low-margin boarding, raising net operating income from 10% in 2024 to 19% in 2031. In addition, support staff labor costs would then fall within the recommended threshold, accounting for no more than 24% of gross income and aligning with industry benchmarks set by Veterinary Business Advisors (Econologics Financial Advisors, 2023).

Financially, these changes improve Ridgeview’s net operating margin from 10% before CT to nearly 20%, which is in line with typical industry benchmarks. This improvement is achieved without cutting staff or reducing wages, consistent with Dr. Bean’s priority of protecting compensation. Instead, margin growth comes from expanded revenue through CT imaging and increased surgical productivity, supported by the remodel and buildout.

CONCLUSION AND RECOMMENDATION

Dr. Bean's original request was for an evaluation of advanced imaging, specifically the addition of fluoroscopy to Ridgeview. In working through this analysis, it became clear that the first and most straightforward step was the conversion of boarding and grooming into a surgical suite. The true value of advanced imaging is not in the diagnostic images alone, but in the additional surgeries that follow. (Antech Diagnostics) Without adequate surgical space, any investment in imaging would be limited. This aligns with broader industry trends, where practices are moving away from lower-value areas such as boarding and grooming and instead converting space into higher-value medical and surgical use (AAHA "To Board or Not to Board", 2023). This is due to the rising cost of employing veterinarians and the rising standard of veterinary care that make it essential that every available square foot in a clinic be used for patient care and doctor utilization.

The primary concern was creating the much-needed additional surgery space. Next, consideration was given to which advanced diagnostic imaging would best complement that investment. The cost-benefit analysis makes clear that while fluoroscopy offers a more conservative path with lower upfront risk, CT generates substantially greater long-term stability and growth. Despite the higher capital investment and ongoing service costs, CT is projected to deliver more than double the net annual return of fluoroscopy and achieve a stronger ROI of 21.2%. Just as importantly, CT integrates directly into Ridgeview's current caseload, supporting high-demand soft tissue, dental, and orthopedic cases, while broadening the overall diagnostic and surgical base of the practice.

To help confirm this recommendation, multiple practicing veterinarians were consulted. Dr. Joi Pearson, from Stanley Veterinary Clinic, agreed that even in an orthopedic-focused practice CT provides more benefits than fluoroscopy. Her perspective reflects a broader consensus that CT offers stronger long-term value in general practice.

Similarly, Dr. Steve Garner, DABVP (Canine & Feline Practice) and the Owner and Chief of Staff at Safari Veterinary Care Centers in League City, Texas, is a strong proponent of fluoroscopy but still emphasized CT's greater value in general practice. On his clinic's website, it states: "Generally speaking it is recommended that pets have Fluoroscopy tests every 6 to 12 months for preventative reasons...If your pet is exhibiting any signs of illness or injury, it's important to take them in for a Veterinary Fluoroscopy as soon as possible." (Safarivet, 2023) In conversation, Dr. Garner highlighted fluoroscopy's usefulness for orthopedics, swallow studies, GI foreign body retrieval, and spinal surgery. He described how fluoroscopy speeds up pin placement, improves accuracy, and allows external fixation to remain a more affordable option compared to open plate repair. When weighing alternatives, Dr. Garner explained that as a practice owner, he would first invest in fluoroscopy for his clinic over advanced ultrasound training or endoscopy, due to its intuitive use and adaptability. However, when asked to choose between CT and C-arm fluoroscopy in general

CONCLUSION AND RECOMMENDATION

practice, his answer was clear: “CT, yes, you got to have it, you could buy it for \$200,000, those things are rock solid, they don’t have glitches or problems...we use it 1–2 times a day, charging \$2,000 or \$2,500 a pop, it pays for itself over and over again.”

This report’s cost–benefit analysis reflects those clinician conclusions. Many of the high-value applications of fluoroscopy depend on complementary equipment that we do not currently own. For example, foreign body retrieval with fluoroscopy requires endoscopes, and spinal surgery requires CT or MRI to first identify the lesion. Orthopedic cases, primarily managed by Dr. Smith, are the one area where fluoroscopy could be used consistently, which is why it still produced a 13.1% ROI in the analysis. Even so, fluoroscopy remains most practical in referral centers with existing specialized caseloads and supporting equipment. CT, on the other hand, can be applied directly to our current caseload, supports both orthopedic and soft tissue diagnostics, and represents a more predictable and financially sound business plan.

Estimating caseload was one of the most difficult and error-prone aspects of this report, but I took a cautious approach and applied multiple safeguards to keep the projections realistic and reliable. CT is already widely adopted, with published benchmarks and other veterinarians confirming its consistent use and client demand. Even though CT comes with a higher upfront cost, it has a proven return profile, making it the more established path forward. For Ridgeview, the most logical sequence is surgery expansion paired with CT. Fluoroscopy could be a potential future step once caseload needs are established, but it should be remembered that any evaluation of potential future equipment must be framed as an investment, weighing not just the upfront purchase price but also the long-term costs and returns it can generate for the practice(Coyle & Stephenson, 2021, *Understanding the True Cost of technology*).

Throughout my calculations and assumptions, I intentionally took a conservative approach. I built in a 10% contingency on all project costs and used the higher end of remodel cost estimates. CT caseload was modeled at less than one scan per weekday at maximum output, which is a realistic number reported by practices. I also reduced the projected surgical revenue increase by 20% to account for lost appointment slots due to increased surgery. In addition, I assumed a gradual ramp-up of utilization rather than immediate full capacity. The cost of financing was incorporated directly into the ROI calculation. Together, these steps ensured that the financial modeling reflected caution and avoided overly optimistic projections.

To ensure credibility, I replaced broad assumptions with real estimates wherever possible, supported by supplier and practitioner feedback. Rather than relying on umbrella figures, the estimates were built from hardware-specific quotes for each major piece of equipment and tied directly to the facility needs of Ridgeview. I also obtained two independent remodel quotes from building contractors to further anchor construction costs. Published benchmarks were used when available, and detailed quotes were obtained from Patterson Veterinary for both the

remodel and new equipment. One Patterson supplier even remarked, “You are far more organized than anyone I’ve worked with on new clinics. This group has built and remodeled for many years, so you truly stunned me—amazing job!” Feedback like this reinforced that the approach taken was thorough and grounded in reality. I also reached out to six different refurbished CT and fluoroscopy suppliers, detailed in the appendix, to obtain pricing ranges and learn which models veterinarians preferred and had long-term success with. In addition, I spoke directly with multiple practicing veterinarians, including Dr. Garner, regarding fluoroscopy, to fill practical gaps where published information was limited. Taken together, these measures ensured that the financial modeling was firmly rooted in realistic market conditions rather than theoretical assumptions.

Final Conclusion

The best plan forward is to expand surgical space and invest in CT as the first advanced imaging modality. This combination provides immediate clinical and financial benefits while also positioning the practice for long-term growth. This report evaluated the equipment as an investment, with careful consideration of overall practice strategy, doctor expertise, market conditions such as community demographics and demand, potential staffing changes, and long-term costs (Coyle & Stephenson, 2021). Fluoroscopy remains a valuable tool in the right setting, but for Ridgeview, the case volume for fluoroscopy is too unproven. This conclusion is supported by the detailed cost–benefit analysis, expert veterinary advice, broader trends in veterinary medicine, and the specific needs of Ridgeview Clinic. Taken together, this approach fulfills Dr. Bean’s goal of keeping the practice medically current and well-equipped while ensuring profitability and a sound business plan for the years ahead.

“To cut is to cure, but to image is to know where to cut.”

APPENDICES

Appendix A – Hardware Costs Breakdown

General Surgery Remodel Hardware: \$72,338.32

Fluoroscopy Specific Hardware: \$12,961.56

CT Specific Hardware: \$14,995.00

GENERAL SURGERY REMODEL HARDWARE ITEMS

Prices Received from Patterson quote in August 2025

Category	Item Description	Patterson Item #	Quantity	Total Price
Surgical & Orthopedic Equipment	General Orthopedic Instrument Pack	78335406	1	\$2,541.34
	Pin/Wire Instrument Pack (driver, wire instruments, tensioning tools)	78091592 etc.	1	\$245.00
	Steinmann Pin Set (assorted sizes)	78110625–78147568	1 set	\$106.00
	Pin Cutter/Extractor	78094326	1	\$245.00
	Additional general surgery pack/equipment (wrapping supplies, etc.)	78939396, 78840797, 78084426	1 set	\$516.11
	High-capacity suction unit	78083777	1	\$434.10
	Midmark® IV Fluid Warmer	78944467	2	\$728.00
Surgery Support Equipment	Tabletop steam sterilizer	78335439	1	\$7,533.00
	Stainless steel surgery table (medium-end, automatic raising/lowering)	78565482	1	\$6,026.00
	Surgery lights	78946418	2	\$24,872.00
	Kick buckets	78401965	3	\$540.00
	Stainless-steel mayo stands	78033264	3	\$712.53
Anesthesia & Recovery	Versa II Anesthesia System	78910545	2	\$5,090.00
	Compact Wall-Mount Anesthesia System	78932648	1	\$2,650.00

APPENDICES

	Brio X-Series Vet Multiparameter	78951198	2	\$7,990.00
	Patient warming system (forced air or equivalent)	78954262	2	\$1,869.24
Exam & Housing	Wet exam/prep table	78955366	1	\$3,678.00
	Modular Cages	78830965	2	\$6,562.00

SURGERY REMODEL HARDWARE ITEMS SPECIFIC TO FLUOROSCOPY

Category	Item Description	Patterson Item #	Patterson Quote Per Item	Quantity	Notes	Total Price
Imaging & Radiation Safety	Lead aprons, thyroid shields, and dosimetry badges	78939840	\$335.26	6 sets		\$2,011.56
Surgery Support Equipment	Surgery table (radiolucent, C-arm fluoroscopy capable)		\$3,650.00 (<i>VSS Medical, Veterinary Fluoroscopy Surgery Table C-arm Table</i>)	3	This Item quote was not received from Patterson.	\$10,950.00

SURGERY REMODEL HARDWARE ITEMS SPECIFIC TO CT

Category	Item Description	Patterson Item #	Patterson Quote Per Item	Quantity	Total Price	Notes
Monitoring & Support	Brio X-Series Vet Multiparameter Monitor	78951198	\$3,000 (estimate)	1	\$3,995.00	Dedicated for CT suite use
Patient Positioning	Positioning Aids		\$1,000	1 set	\$1,000	This Item quote was not received from Patterson.
IT & Integration	Server Hardware and Integration		\$10,000	1	\$10,000	This Item quote was not received from Patterson.

C-ARM COST

Estimated Cost used for Report

- OEC 9800 - \$50k
- OEC 9900 - \$75k

The \$50,000 estimate used in this report reflects not just the purchase price but also the impact of financing, depreciation, and setup costs. Financing a \$50,000 unit over five years at 8.5% interest adds approximately \$11,550, bringing the total outlay to \$61,550. Straight-line depreciation over five years with a 35% tax rate produces about \$17,500 in tax savings, which reduces the effective cost to \$44,050. To remain conservative this report rounds the estimate to \$50,000

(“Veterinary Practice Technology Costs - Simmons Inc.,” 2015).

Due to the limited published information about the price for C-arms, contacting suppliers was the best option. These numbers were based on phone calls or emails to three major refurbished medical equipment providers. I learned that the OEC 9800 is a popular choice with veterinarians for it is considered a reliable “workhorse”. I learned from the representative from Atlantis Worldwide that most veterinarians require the 12-inch image.

Refurbished OEC 9800 with 12” image

- L.G. from Metropolis International: 30K / 9” - 22K-26K (Metropolis International)
- Representative from Atlantis Worldwide gave estimate of 50-60k (Atlantis Worldwide)
- JB at Amber Diagnostics gave estimate of 46-49K (C-Arm Fluoroscopy, Amber Diagnostics)

Refurbished OEC 9900 with 12” image

- L.G. from Metropolis International: 65K-70K / 9” - 50K-55K
- Representative from Atlantis Worldwide gave estimate of 65k-80k
- JB at Amber Diagnostics gave estimate of 70K-75K

New OEC

- JB at Amber Diagnostics gave estimate of 200k
- Patterson gave estimate of 150k-200k (Veterinary Supplies, Equipment & Services | Patterson)

Included in Price for Refurbished Items

Delivery
 Installation
 Refurbishment
 1-year full warranty

CT MACHINE COST ESTIMATION

Estimated Cost used for Report

- \$190k

The \$190,000 estimate used in this report reflects a conservative planning figure that accounts for both purchase price and the impact of financing, depreciation, and setup costs. A refurbished fixed 8–16 slice CT machine is typically quoted in the \$180,000–\$200,000 range, with multiple sources confirming this as the current market value. Financing a \$190,000 purchase over five years at 8.5% interest adds approximately \$43,890, bringing the total outlay to \$233,890. Straight-line depreciation over five years with a 35% tax rate provides about \$66,500 in tax savings, which reduces the effective cost to \$167,390. To remain conservative this report rounds the estimate to \$190,000 (*“Veterinary Practice Technology Costs - Simmons Inc.,” 2015*).

Unlike fluoroscopy, the data available for CT prices is much more published and known because of how popular they have become in veterinary practice. I was able to contact two major refurbished supplier and the estimate that was given was within the researched values.

Price Estimate

Price for a Fixed Refurbished 8-16 Slice CT Machine

180K-200K - Alan Moretti, VP, Strategic Business Development from Radiology Oncology (ROS, Oncology)

188K -250k – Jim McCay MXR Imaging, Sales Manager, Northeast Territory (MXR Imaging - Medical Imaging Solutions)

150K - (What to Look For in a Veterinarian CT Scanner)

180-250K – (‘How Much Does a Veterinary CT System Cost? | Antech Diagnostics)

Model Examples

GE LightSpeed Ultra (2002) – 8 Slice

GE BrightSpeed Edge (2005) – 8 Slice

GE LightSpeed (2002) – 16 Slice

GE BrightSpeed (2005) – 16 Slice

GE Optima (2010) - 16 Slice

Canon Aquilion 16 (2003) – 16 Slice

Price for a Fixed Refurbished 32-64 Slice CT Machine

240K - (‘How Much Does a Veterinary CT System Cost? | Antech Diagnostics’)

840K - (64-slice, prizmedimaging.com)

Price for a New 8-64 Slice CT Machine

600K-1 Mil – ('How Much Does a Veterinary CT System Cost? | Antech Diagnostics)
 500K-1 Mil - Alan Moretti, VP, Strategic Business Development from Radiology Oncology

Appendix B – Revenue Estimate Rationale

SURGERY REVENUE ESTIMATION

Surgical quote provided by Precision Mobile Veterinary Services, West Lafayette Indiana.

Orthopedic surgeries:

- Cruciate ligament repair (CCL): \$875–\$1,075
- Medial patellar luxation (MPL): \$1,000–\$1,200
- Femoral head ostectomy (FHO): \$650–\$850
- Fracture repairs: \$1,500–\$3,000

Soft tissue surgeries:

- General range: \$400–\$1,000

The average revenue per surgery estimates align closely with the real-life quote. Dr. Luke's mixed caseload of soft tissue and orthopedics puts him somewhere in the middle between the two.

The projected monthly increases are reasonable; which is roughly 2 extra surgeries per week, per doctor. This modest growth fits well within each doctor's schedule and reflects the realistic gains expected from expanded surgical capacity.

FLUOROSCOPY CASE GOAL ESTIMATION

Given the scarcity of published data on fluoroscopy use in general practice an estimate was made to project C-arm case load for a 3.5-doctor practice.

1). A phone conversation was had with Dr. Steven Garner who is the owner and chief DVM Safari Veterinary Care Centers in League City, Texas. At Safari Veterinary Care Centers, they use fluoroscopy every day and for a wide range of conditions. Dr. Garner went over some of the most common uses of fluoroscopy at his referral practice and specifically where he could see fluoroscopy being used in general practice. Overall the uses of C-arm by itself are low because often they require complementary equipment to be fully utilized.

2). The numbers were based on an estimate of Dr. Smith's caseload that could utilize C-arm.

CT CASE GOAL ESTIMATION

For Ridgeview, a 3.5-doctor surgery-focused general practice, the projection is 22 CT scans per month, or just over one scan per weekday. This projection aligns with comparative data and is further supported by the clinic's surgical focus, as doctors with surgical interest also drive diagnostic demand.

Comparative data:

Stanley Veterinary Clinic (small animal GP): CT used **36x per month**, for dentals, orthopedics, looking for masses or abnormalities. 7-doctor Practice, charge \$1200-\$1500

DVM, Barrington Square Animal Hospital (small animal GP): CT used **1-2x per day**. 6-doctor practice.

Dr. Steve Garner, Safari Veterinary Care Center (referral center): CT used **2x per day**. Charges are \$2000-\$2500.

Appendix C – Facilities Estimate

Surgical Remodel Estimate – 350 SF

- \$350 per square ft used for report = \$122,500

A senior project manager at eGenesis who is familiar with surgical remodels estimated \$300-\$400 per square foot to convert the former boarding and grooming space into a surgical suite, provided the existing air handler can meet recommended ventilation (20% outside air with 15 room air changes per hour). Estimate includes flooring, plumbing, electrical, oxygen and scavenging lines, cabinets, windows, sinks, and finishes.

A contractor from Direct Point Construction gave an estimate of \$160 per square foot.

CT Buildout - 392 SF

- \$350 per square ft used for report = \$137,200

WORKS CITED

HVAC, roofing, flooring, Framing, Foundation - \$350 per square foot (‘How Much Does a Veterinary CT System Cost? | Antech Diagnostics’) * 392 SF - \$137,200

A senior project manager at eGenesis mentioned that often add on are about the same price as remodels.

Appendix D – Loan Amortization Schedule

Fluoroscopy + Surgery Loan (\$295,951, 7% over 6 years)					CT + Surgery Loan (\$637,650, 7% over 6 years)				
Year	Payment	Interest	Principal	Ending Balance	Year	Payment	Interest	Principal	Ending Balance
1	\$61,996	\$20,717	\$41,279	\$254,672	1	\$133,776	\$44,636	\$89,141	\$548,509
2	\$61,996	\$17,827	\$44,169	\$210,503	2	\$133,776	\$38,396	\$95,381	\$453,129
3	\$61,996	\$14,735	\$47,261	\$163,242	3	\$133,776	\$31,719	\$102,057	\$351,071
4	\$61,996	\$11,427	\$50,569	\$112,673	4	\$133,776	\$24,575	\$109,201	\$241,870
5	\$61,996	\$7,887	\$54,109	\$58,564	5	\$133,776	\$16,931	\$116,845	\$125,025
6	\$61,996	\$4,100	\$57,896	\$668	6	\$133,776	\$8,752	\$125,024	\$0
Total Payments: \$371,976					Total Payments: \$802,656				
Total Interest Paid: \$77,693					Total Interest Paid: \$165,006				

WORKS CITED

64-slice PrizMed Imaging. Available at: <https://prizmedimaging.com/collections/ct-64-slice> (Accessed: August 19, 2025).

“2025 Veterinary Practice Market Outlook - Simmons Inc.” (2025), 24 January. Available at: <https://simmonsinc.com/2025-market-outlook/> (Accessed: August 23, 2025).

“Alan Moretti” Radiology Oncology Systems. Available at: <https://www.oncologysystems.com/team/alan-moretti/> (Accessed: August 30, 2025).

Borba, J. (2020). *Sterile surgical instruments on blue drape* [Photograph]. Unsplash. Free to use under Unsplash license. <https://unsplash.com/photos/ucnh3ldFKcE>

Coyle, S. et al. “Understanding the true cost of technology - Veterinary Practice News.” Available at: <https://www.veterinarypracticenews.com/understanding-the-true-cost-of-technology/> (Accessed: August 23, 2025).

WORKS CITED

Homepage Metropolis International. Available at: <https://metropolismedical.com/> (Accessed: August 30, 2025).

“How Much Does a Veterinary CT System Cost? | Antech Diagnostics” . Available at: <https://www.antechdiagnostics.com/equipment-resources/much-veterinary-ct-system-cost/> (Accessed: August 18, 2025).

Hub, T.U.G.S.L. *Introduction to C-Arm Imaging and Radiation Safety in the Operating Room, The UN Global Surgery Learning Hub*. Available at: <https://www.surghub.org/course/introduction-intraoperative-imaging> (Accessed: August 15, 2025).

Managing the contingency allowance | AIA . Available at: <https://www.aia.org/resource-center/managing-the-contingency-allowance> (Accessed: August 15, 2025).

Miroshnichenko, T. (2021). *Veterinarian examining CT scan and X-ray on monitors* [Photograph]. Pexels. Free to use under Pexels license. <https://www.pexels.com/photo/6234983/>

MXR Imaging - Medical Imaging Solutions | MXR . Available at: <https://mxrimaging.com/> (Accessed: August 30, 2025).

Reeder, J. (2023) “To Board or Not to Board,” *AAHA*, 1 May. Available at: <https://www.aaha.org/trends-magazine/may-2023/f2-to-board-or-not-to-board/> (Accessed: August 23, 2025).

Regulation, C.S. and H. (2025) *Radiology, Consumer Services and Healthcare Regulation*. Available at: <https://www.in.gov/health/cshcr/medical-radiology-services/> (Accessed: August 14, 2025).

Rvt Salary in Indiana: Hourly Rate (August, 2025) ZipRecruiter. Available at: <https://www.ziprecruiter.com/Salaries/Rvt-Salary--in-Indiana> (Accessed: August 20, 2025).

Safarivet (2023) “What Is Veterinary Fluoroscopy? Benefits Of Using Fluoroscopy For Pets In League City, TX - Safari Veterinary Care Centers,” *Veterinarians In League City, TX | Safari Veterinary Care Centers*, 5 April. Available at: <https://www.safarivet.com/blog/what-is-veterinary-fluoroscopy-benefits-of-using-fluoroscopy-for-pets-in-league-city-tx/> (Accessed: August 6, 2025).

Team, F.C. (2024) “Veterinary Practice Financial Fitness - FVMA,” *FVMA - Dedicated to the Dedicated*, 19 March. Available at: <https://fvma.org/veterinary-practice-financial-fitness/> (Accessed: August 23, 2025).

“The Hidden Costs of Buying New C-Arms vs. Refurbished Models - C Arms - New, Used and Rentals” (2025), 7 July. Available at: <https://pacifichealthusa.com/the-hidden-costs-of-buying-new-c-arms-vs-refurbished-models/> (Accessed: August 14, 2025).

Used Medical Imaging & Refurbished Radiology Equipment (no date). Available at: <https://www.atlantisworldwide.com/> (Accessed: August 30, 2025).

WORKS CITED

Veterinary CT Imaging Market Size & Share Report, 2025 – 2034 Global Market Insights Inc. Available at: <https://www.gminsights.com/industry-analysis/veterinary-ct-imaging-market> (Accessed: August 29, 2025).

Veterinary Fluoroscopy Surgery Table C-arm Table VSS Medical. Available at: <https://www.vetsurgicalsolutions.com/product-page/veterinary-fluoroscopy-surgery-table-c-arm-table> (Accessed: August 30, 2025).

“Veterinary Practice Ownership - Leaving a Legacy” (2015), 4 March. Available at: <https://simmonsinc.com/veterinary-practice-ownership-leaving-a-legacy/> (Accessed: August 23, 2025).

“Veterinary Practice Technology Costs - Simmons Inc.” (2015), 4 November. Available at: <https://simmonsinc.com/veterinary-practice-technology-costs/> (Accessed: August 23, 2025).

Veterinary Supplies, Equipment & Services | Patterson. Available at: <https://www.pattersonvet.com/> (Accessed: August 30, 2025).

“VIN Rounds: Computed Tomography in Veterinary Practice - CT Basics, Benefits, and Imaging Case Studies” (2015) *VIN.com* [Preprint]. Available at: <https://www.vin.com/doc/?id=6890125>.

What to Look For in a Veterinarian CT Scanner PrizMed Imaging. Available at: <https://prizmedimaging.com/pages/what-to-look-for-in-a-veterinarian-ct-scanner> (Accessed: August 19, 2025).

What’s Next for the OEC 9800? . Available at: <https://www.blockimaging.com/blog/whats-next-for-the-oec-9800> (Accessed: August 14, 2025).