

# Economic Impact Analysis Fee Adjustment Report

## X-ray Machine Facilities

May 2023

Proposal: To update and increase fees for X-ray Machine Facility program anticipated effective date, December 1<sup>st</sup>, 2023  
WAC 246-254-053

### Overview

The Department of Health (department) works to protect and improve the health of all people in Washington state. We accomplish this work, in part, through regulation of the X-ray Machine Facility program ([Chapter 70A.388](#)).

State law, [RCW 43.70.250](#) (License fees for professions, occupations, and businesses), [RCW 43.20b.020](#) (Fees for services) and [RCW 43.70.110](#) (License fees – costs-other charges), requires fees to fully fund the work of licensing and regulating the X-ray Machine Facility program. Considering the program’s financial forecast, the department recommends a fee increase to bring the fee balance into alignment with the recommended fee reserve amount. The department is also proposing changes to machine categories within the fee schedule. This will allow the department to better track and manage X-ray Machines across Washington. This also allows the department to be more efficient in regulatory and inspection processes.

The X-ray program consists of 16 staff members that regulate and inspect devices which produce radiation in the forms of X-ray neutrons, and protons. The physicists in the program routinely conduct onsite inspections to ensure occupational and public safety standards are met. The program tracks and maintains patient exposure data to create and compare benchmarks. Various data sets are used to help reduce the amount of radiation received by the public.

The program ended fiscal year (FY) 2022 with a fee balance of \$922,176. The fee balance is currently operating at a surplus and will cover program revenue deficits for FY 2023. The fee balance was generated due to the program having a high personnel vacancy rate. The program operated with 3-4 positions being vacant over the period of the past six years. This surplus will fall below the recommended reserve balance in FY 2023. The program costs are projected to exceed revenue received in FY 2023 by \$138,835 and continue exceeding revenue in each future fiscal year. This document summarizes data on revenue, expenditures, fee reserve, cost drivers, financial forecast, and the proposed fees.

### Revenue

The department currently licenses X-ray Machine Facilities and completes radiation shielding plan reviews in Washington state ([RCW70A.388.010, 040 & 050](#)). The program currently regulates over 6,400 X-ray machine facilities with over 22,000 machines. Over the past four years the program reviewed an average of 155 shielding plan reviews annually.

The X-ray program also receives annual funding from the Food and Drug Administration Mammography Program to cover the costs of mammography inspections. As a result of this funding, these costs are not included in this fee rate setting process.

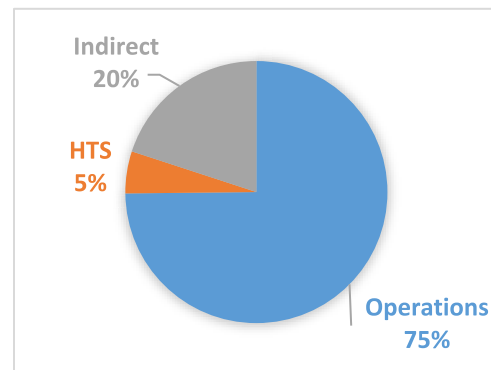
### Fees

Annual machine facility and tube fees are received throughout the year on the individual machine facility renewal date. Plan review fees are received as plans are submitted for review. Revenue remained consistent over the past six years with a small overall decrease of 3%. All fees are listed in [WAC 246-254-053](#). The last fee changes were in 2019 and 2010, changing fees according to the table below:

Fees: Rate Change History			
Type	Title of Fee	Effective: 6/30/2008	Effective: 2/19/19
Machine Facility	Radiation Safety Program	\$5,827	\$0
Type	Title of Fee	Effective: 6/30/2008	Effective: 12/28/10
Machine Facility	i. Dental, podiatric, veterinary uses	\$134	\$113
Machine Facility	iii. Industrial, research, educational, security, or other facilities	\$184	\$113
Machine Tubes	i. Dental (intraoral, panoramic, cephalometric, dental)	\$46	\$28
Machine Tubes	xiii. Stereotactic (mammography)	\$131	\$113
Machine Tubes	xvii. Airport baggage	\$46	\$28
Machine Tubes	xviii. Cabinet (industrial, security, mail, other)	\$46	\$28
Machine Tubes	xix. Other industrial uses (includes industrial fluoroscopic uses)	\$46	\$28
Fees with no changes are not listed in this table			

### Expenditures

Costs for the program are classified into three primary categories: Operations (75%), Health Technology Solutions (5%), and indirect (20%).



Operations costs are the largest expense of this program (75%) and include personnel to manage it. This includes administrative oversight, program management, inspections, communication, outreach, technical assistance, training, emergency management preparation, development and implementation of legislation, and stakeholder relations.

Health Technology Solutions (HTS) activities (5%) include the following services: EHAPPS X-ray database maintenance and operations support. This support maintains our program database that collects, stores, and reports all program data.

Indirect costs (20%) are agency-wide, general management costs necessary for any program to exist and consist of administrative activities for the general operation of the agency. Examples of indirect costs include financial services, human resources, and information resource management. The indirect rate is a standardized method of charging individual programs for their share of indirect costs and is reviewed and approved annually by the U.S. Department of Health and Human Services.

Expenditure fluctuation from year to year includes equipment replacement that occurred in FY 2017, 2018, and 2020. This equipment is used to perform physics evaluations on X-ray machines. Other fluctuations include decreased travel in FY 2021 due to COVID affecting our ability to perform onsite inspections. Operation expenditures from 2017 –2022 also reflect lower expenditures due to staffing turnover and 3-4 positions being vacant annually.

The table below shows expenditures for each of these cost categories over the past six years.

Program Spending by Category						
Fiscal Year	2017	2018	2019	2020	2021	2022
Operations	1,505,658	1,501,226	1,503,279	1,677,122	1,521,082	1,706,486
HTS	76,653	70,535	92,078	115,662	166,246	118,421
Indirect	331,526	358,558	377,986	476,560	438,077	455,451
<b>Subtotal</b>	<b>1,913,567</b>	<b>1,913,567</b>	<b>1,973,343</b>	<b>2,269,343</b>	<b>2,125,405</b>	<b>2,280,358</b>

## Cost Drivers

The cost to license and regulate the X-ray Machine Facility program is primarily driven by the number of physicists in the program who perform regular onsite inspections. Currently the program regulates over 6,400 facilities with over 22,000 different machines. Staffing costs account for 69% of total program costs. Inspections are conducted on a one-, two-, or four-year cycle depending on facility type. The program conducts an average of 2,000 inspections per year. Average times of inspections are dependent upon the type and number of machines within a facility. The complexity of inspections varies by X-ray machine type. Inspection times can last 30 minutes or multiple days depending on machine type and quantity. In addition to inspections, staff also provide technical assistance, radiation safety information, shielding plan reviews, image quality troubleshooting, as well as investigations of public and industry complaints. Regular reoccurring equipment purchases for inspectors averages 5%

of total program costs. Equipment is replaced as necessary to match technological advancing in the imaging and radiation safety industry. Travel for onsite inspections averages 2% of total program costs.

The program is also supported by an X-ray database that provides detail and data at a sufficient level to regulate X-ray machine facilities. Costs to maintain this database average 5% of total program costs. Overtime this database will be required to be updated resulting in a temporary cost increase to upgrade to new technology. The last time this technology was upgraded was 2012.

## **Operations**

In FY 2020, the program increased staffing capacity by an additional 1 FTE (full-time equivalent), increasing the staff from 14 FTE to 15. The program added an additional Radiation Health Physicist 4 position to align with the span of control metrics desired by the agency. This metric is designed to ensure appropriate supervision to create balanced workload and leadership for the program. The team of 13 staff is now split between two supervisors. FY 2020 also included an increase in inspector equipment replacement. FY 2021 expenditures decreased by 12% due to the office FTE variance increasing from an average of 3.5 vacant FTEs to 4.8. FY 2022 expenditures increased due to a lower staffing vacancy rate of 3.52 FTE and an additional Radiation Health Physicist 3 (RHP3) added to the program to provide capacity to the CT program. This increase in capacity allowed 2 lead positions, one for the CT program and one for State Inspections Lead. One RHP3 does not have the capacity to oversee both programs and adding the additional RHP3 position provided the capacity needed to regulate those subspecialties.

## **Fee Reserve**

The Office of Financial Management (OFM) requires agencies to maintain a reasonable working capital reserve in state accounts to cover fluctuations in cash flow. The cash reserve should be enough to protect against financial volatility because of significant regulation activity or unforeseen changes in X-ray Machine Facility trends.

Due to the size of this program, the fee balance is susceptible to expenditures resulting from equipment replacement costs and the occurrence of other unforeseen events. Based on these factors, the department recommends the program build a reserve of 25 percent, currently around \$824,000 or approximately 3 months of annual expenditures.

The program ended FY 2022 with a fee balance of \$922,176. The X-ray Machine Facility program is currently operating at a deficit of this reserve in FY 2023.

## **Financial Forecast**

### **Revenue**

The department does not anticipate any growth in facilities or machines over the next five years. Facilities are projected to continue renewing at an average renewal rate of 100 percent. This rate assumes a small decrease in current facilities operations as well as the addition of a comparable number of new facilities.

### Expenditures

The department anticipates costs for the program to increase by 14% in FY 2024 and 12% in FY 2025. Most of this increase is temporary and associated with a data system replacement (FY 2024, 2% and FY 2025, 9%). The current system does not have the capacity to be updated to meet advancing industry trends. The cost estimated below will cover initial costs to begin replacement. If it is discovered that there are increased costs during implementation, actual costs may be added to a future fee adjustment. The data system will improve operations by more accurately tracking and accessing X-ray data, address registration and billing efficiency as well as improve inspection efficiency by streamlining many workflow functions. The other increases in FY 2024 are for two additional staff members (10%). The first new position is a Radiation Health Physicist 3 position. This RHP3 position will oversee the Radiation Therapy and Fusion program. This position will be responsible for developing regulations, training staff, creating inspections procedures, and ensuring the department stays up to date with advancing accelerator technology. The second position is Health Services Consultant 4 position. Many of the X-ray Washington Administrative Codes are outdated and require updates. This position will provide the expertise and coordination to the X-ray program revise regulations to match industry standards. The other 2% increase is due to annual inflation mostly around personnel-related annual inflation costs.

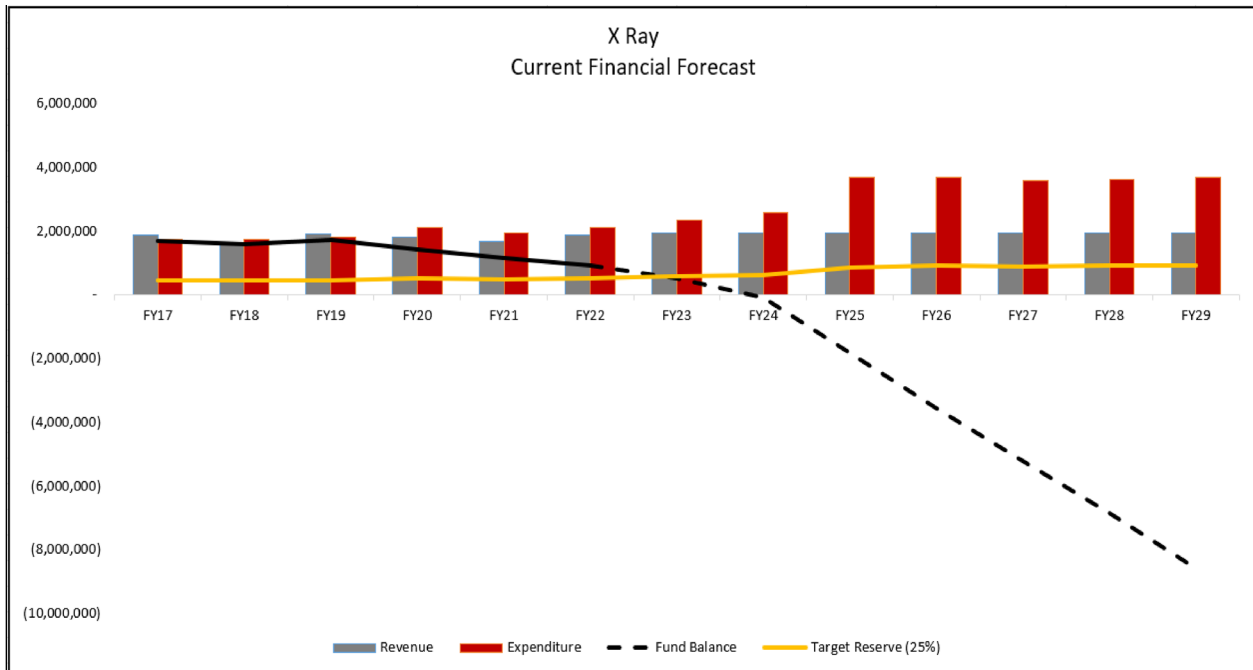
#### Personnel

Cost Increase Category	FY24	FY25	FY26
Personnel Inflation	2%	2%	2%
Partial Data System	2%	9%	9%
RHP3	5%		
HSC4	5%		
<b>Total</b>	<b>14%</b>	<b>12%</b>	<b>12%</b>

### Fee Reserve

The program is not expected to generate enough revenue to cover costs over the next six years, which includes the necessary drawdown of the reserve fee balance.

The chart below shows actual revenue and expenditures from FY 2017 through FY 2022, and projected revenue and expenditures from FY 2023 through FY 2029.



## Fee Proposal

To bring the X-ray fee balance into alignment with requirements, the following fees are proposed:

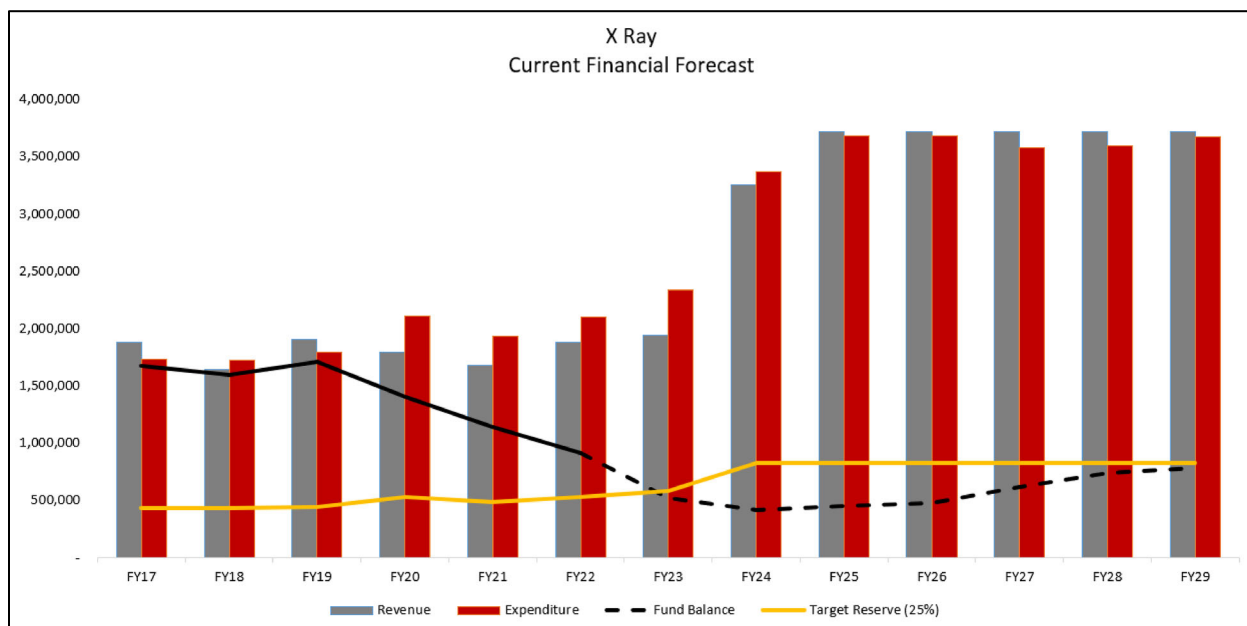
<b>Radiation Facility Fees</b>			
<b>Facility Type</b>		<b>Old Fee</b>	<b>Proposed Fee</b>
Dental, podiatric, veterinary		\$ 107.00	\$ 195.00
Hospital, medical, chiropractic		\$ 207.00	
Industrial, research, educational, security or other facilities		\$ 107.00	
Mammography only		\$ 89.00	
Bone densitometry only		\$ 89.00	
Electron microscopes only		\$ 89.00	
Bomb squad only		\$ 89.00	
<b>Radiation Machine Tube Fees</b>			
<b>Category</b>	<b>Machine Type</b>	<b>Old Fee</b>	<b>Proposed Fee</b>
<b>Dental</b>	Intraoral	\$27	\$58
	Handheld	\$27	\$58
	Panoramic/Cephalometric	\$27	\$58
	Cone Beam CT	\$27	\$58
	Educational	\$27	\$58
	Radiographic/Other	\$27	\$58
	<b>Veterinary</b>	Radiographic	\$46
Portable		\$46	\$77
Dental		\$46	\$77
Cone Beam CT		\$46	\$77

	Fluoroscopic	\$46	\$112
	Computed Tomography	\$46	\$191
<b>Podiatry</b>	Radiographic	\$46	\$86
	Cone Beam CT	\$46	\$86
	Educational	\$46	\$86
	Handheld	\$46	\$86
	Fluoroscopic	\$46	\$231
<b>Medical Radiographic</b>	Fixed	\$131	\$246
	Mobile	\$131	\$246
	Portable	\$131	\$246
	Cone Beam CT	\$131	\$246
	Educational	\$131	\$246
<b>Fluoroscopic</b>	C-arm	\$131	\$231
	Micro Amperage (Mini) C-arm	\$131	\$231
	O-arm	\$131	\$231
	Specialty Rooms	\$131	\$231
	Under Table	\$131	\$231
	Educational	\$131	\$231
<b>Therapy</b>	Accelerator (Linear)	\$131	\$334
	Non- Accelerator	\$131	\$334
	Superficial Radiation Therapy	\$131	\$334
	Educational	\$131	\$334
	Other	\$131	\$334
<b>Computed Tomography</b>	Diagnostic	\$131	\$783
	Simulation	\$131	\$490
	Attenuation Correction (PET/SPECT)	\$131	\$490
	Portable	\$131	\$783
	Mobile	\$131	\$783
	Educational	\$131	\$783
<b>Mammography</b>	Standard (including tomography)	\$0	\$0
	Stereotactic Mammography	\$107	\$55
<b>Bone Densitometer</b>	Standard	\$0	\$84
	Body Composition Scanner	\$27	\$84
<b>Industrial</b>	Cabinet X-ray	\$27	\$133
	Blood Irradiator	\$27	\$133
	Specimen Analyzer	\$27	\$133
	Medical Examiner	\$27	\$133
	Vault (less than 1MeV)	\$46	\$167
	Vault (greater than 1MeV)	\$46	\$331
	Open Beam Radiography	\$46	\$133
	Particle Accelerator	\$46	\$331
<b>Security</b>	Body Scanner	\$27	\$133
	Baggage Scanner	\$27	\$133
	Bomb Squad	\$0	\$133

	Back Scatter	\$27	\$133
<b>Analytical</b>	Cabinet XRF	\$27	\$133
	Handheld XRF	\$27	\$133
	X-Ray Diffraction	\$27	\$133
<b>Electron Microscopes</b>	Electron Microscopes	\$0	\$0
<b>Other Fees</b>			
	<b>Category</b>	<b>Old Fee</b>	<b>Proposed Fee</b>
	Shielding Plan Review	\$ 344	\$ 778
	Follow Up Plan Review	\$ 656	\$ 1,561
	Expedited Plan Review	\$ 1,000	\$ 2,339
	Non-Compliance Inspection	\$ 118	\$ 1,281

This proposal allows the department to stabilize the fee balance at the reserve rate.

The chart below shows projected revenue and expenditures for current and proposed fees from FY 2017 through FY 2029.



The department will continue to monitor the financial health of the X-ray program over a 6-year outlook and propose fee adjustments as needed to comply with statutory requirements.