

City of Camas

Facility Condition Assessment Volume 1: Executive Summary Report



Prepared by MENG Analysis

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Executive Summary

Introduction

In 2021, the City of Camas, Washington engaged MENG Analysis to complete a comprehensive facility condition assessment (FCA). The purpose of this assessment is to assist City staff in organizing & prioritizing maintenance backlog needs while supporting future-focused proactive facility management. Proactive facility management includes but is not limited to, planning and budgeting for short-term correction of Observed Deficiencies (ODs), and long-term major maintenance, referred to in this report as Predicted Renewals (PRs).

The surveyed facilities included 17 buildings on 11 sites. The total square footage of the surveyed buildings is just under 276,000 SF.

FCA Stats	
Number of Surveyed Buildings	Total SF Surveyed
17	276K
Total Replacement Value of Facilities (2022 dollars)	Long-term Needs 2028-2041
\$61M	\$18M
2022-2027 Deficiencies	Priority¹ Needs 6 Years
\$17M	\$6.3M

Report Organization

This Executive Summary Report (Volume 1) presents an introduction and overview to the Facility Condition assessment process as well as summary findings across all facilities. The Facility Detail Report (Volume 2) contains the database-generated subsystem level reports.

Terminology and Abbreviations

To aid in understanding the data and concepts presented in this report, the following list includes definitions of common terms and abbreviations related to the FCA process.

Facility Condition Assessment (FCA): A structured process to document the conditions of site infrastructure and building systems. FCAs are typically performed by a multi-disciplinary team of architects, engineers, construction, and cost specialists. Facility information and condition data should be maintained in a database for ease of updating and reporting. The data should be renewed over time.

¹ Priority needs include life-safety and code issue deficiencies

Facility Condition Index (FCI): A benchmark used to compare relative condition of facilities within a portfolio of assets; derived by the following formula:

Note: There are a number of different methods used by various organizations to calculate that backlog. For this reason, using FCIs to compare City of Camas facilities to other organizations may not represent accurate equivalency.

$$\text{FCI} = \frac{\text{Backlog of Maintenance \& Repair (BMAR)}}{\text{Current Replacement Value (CRV)}}$$

This assessment uses a parametric method that calculates BMAR based on the assessed condition scores. The statistical basis is a study conducted by NASA on over 10,000 surveyed facilities that evaluated the backlog of repair items relative to qualitative condition scores 1 through 5. The parametric backlog for each system is calculated based on a statistical theoretical percentage of that system that would need repair or replacement for each of the qualitative condition scores. The costs of those systems are the facility use cost models customized for Camas. It should also be noted that we continually update our cost models based on current market conditions, so the CRV values in this report will differ from those presented in earlier reports.

Predicted Renewal Model: A theoretical forecast of when building systems will exceed their typical lifespan and funding will be required for renewals.

Remaining Useful Life: An estimate of the years that a facility system may remain serviceable or in operation before failure; which would then require system renewal or replacement.

Subsystem: The term subsystem in this report refers to a Uniformat Level 3 building systems category (e.g., B3010 - Roof Coverings; or B3020 – Roof Opening; or B3030 – Projections).

System: The term system in this report refers to a Uniformat Level 2 building system category (e.g., B30 – Roofing)

Commonly Used Abbreviations

AC = Asphalt concrete
ACT = Acoustic ceiling tile
A/V = Audio/video
AHU = Air handling unit
ASHRAE = American Society of Heating, Refrigeration, & Air Conditioning Engineers
BUR = Built-up roofing
CCTV = Closed circuit television
CFH = Cubic feet per hour (of natural gas)
CFL = Compact fluorescent
CI = Cast iron
CMU = Concrete masonry unit
CO2 = Carbon dioxide
CU = Condensing unit
Cx = Commissioning

DDC = Direct digital control
DHW = Domestic hot water
Dx = Direct expansion
EA = Each (measurable unit)
EF = Exhaust fan
EFIS = Exterior insulation finishing system
FRP = Fiber reinforced plastic
GI = Grease interceptor
GSHP = Ground-source heat pump
HID = High intensity discharge (lamps)
HM = Hollow metal
HVAC = Heating, ventilating, and air conditioning
IT = Information technology
LF = Linear feet (measurable unit)
LED = Light emitting diode
LS = Lump sum (measurable unit)

MDF = Main distribution frame

OWS = Oil/water separator

PA = Public address

P-lam = Plastic laminate

PRV = Pressure regulating valve

PTAC = Packaged terminal air conditioning

Psig = Pounds per square inch (pressure)

SS = Stainless Steel

PVC = Polyvinyl chloride

RTU = Roof top unit

RPBP = Reduced pressure backflow preventer

SF = Square feet (measurable unit)

UPS = Uninterruptible power supply

VAV = Variable air volume

VCT = Vinyl composite tile

VWC = Vinyl wall covering

VOIP = Voice over internet protocol

WAP = Wireless access point

WD = Wood

List of Surveyed Facilities

Table 1 lists the facilities surveyed during this project.

Table 1. List of Surveyed Facilities

Site	Facility	Address	Bldg Area (sf)
Fire Station 42	Fire Station 42	4321 NW Parker Street Camas, WA 98607	12,069
Police Station	Police Station	2100 NE 3rd Ave Camas, WA 98607	23,100
City Hall - Station 41	City Hall - Station 41	616 NE 4th Ave Camas, WA 98607	28,080
City Hall Annex	City Hall Annex	528 NE 4th Ave Camas, WA 98607	10,000
Public Works Operations Center	Public Works Operations Center	1620 SE 8th Ave Camas, WA 98607	21,190
Public Works Operations Center	Mobile Office	1620 SE 8th Ave Camas, WA 98607	
Community Center	Community Center	1718 SE 7th Ave Camas, WA 98607	21,420
Library	Library	625 NE 4th Ave Camas, WA 98607	36,500
Wastewater Treatment Plant	Equipment Building	1129 SE Polk Street Camas, WA 98607	4,250
Wastewater Treatment Plant	Bio-solids Dryer Building	1129 SE Polk Street Camas, WA 98607	3,670
Wastewater Treatment Plant	Digester Building	1129 SE Polk Street Camas, WA 98607	3,420
Wastewater Treatment Plant	Control Building	1129 SE Polk Street Camas, WA 98607	1,630
Wastewater Treatment Plant	Main Office	1129 SE Polk Street Camas, WA 98607	1,770

Site	Facility	Address	Bldg Area (sf)
Wastewater Treatment Plant	UV Building	1129 SE Polk Street Camas, WA 98607	3,360
Fire Station 43	Fire Station 43	1400 A St. Washougal, WA 98671	8,496
Scout Hall	Scout Hall	621 NE 15th Ave Camas, WA 98607	1,200
Lacamas Lake Lodge	Lacamas Lake Lodge	227 NW Lake Road Camas, WA 98607	4,615

Condition Summary

Methodology

The field survey team included architects & engineers with expertise in building assessment who reviewed civil, structural, architectural, mechanical, electrical, plumbing, and site infrastructure systems to a Unifmat Level 3 detail². These descriptions and scores are the basis for generating the Facility Condition Index (FCI), and Weighted Average Condition Score (WACS). Costs were developed by an experienced cost estimator familiar with the regional construction market & construction practices. The costs shown in this report are based on market rates, and not on prevailing wage requirements from the State of Washington.

Facility Condition Index (FCI)

A Facility Condition Index (FCI) is an industry standard used for benchmarking and evaluating a portfolio of facility assets over time³. The FCI is the ratio between a facility's Backlog of Maintenance and Repair (BMAR) and the Current Replacement Value (CRV) of the facility. Therefore, the lower the FCI, the lower the cost of maintenance backlog in relation to the cost of a full building replacement.

Common industry practice is to create a scale for interpreting the FCI as a way to prioritize facility needs. Most organizations adjust their classifications of FCI to relate to their own unique criteria. For this project, we suggest the following FCI breakdown to support decision making.

- Excellent = 0.00 – 0.05 (5%)
- Good = 0.06 – 0.10 (6% – 10%)
- Fair = 0.11 – 0.20 (11% – 20%)
- Poor = 0.21 – 0.25 (21% – 25%)
- Critical = 0.26 (26% or greater)

Weighted Average Condition Score (WACS)

Every surveyed building is broken down into Unifmat categories, systems, and subsystems. The surveyors use standard criteria for scoring each subsystem from 1 to 5, where 1 is Excellent, and 5

² <http://www.unifmat.com/index.php/classification-of-building-elements>

³ Since 1999 GASB 34 has required government agencies to improve Basic Financial Statements, including periodic Condition Assessment of capital assets; subsequent protocols were developed by GSA, NASA, States, NCUBO and others with most sharing similar definitions of BMAR, CRV & FCI.

is Unsatisfactory⁴. These subsystem scores are combined to a weighted average (based on importance) to the system level. A similar weighed calculation is performed at the category level, resulting in a 1-5 score for the building as a whole. This is called the Weighted Average Condition Score (WACS).

For both WACS and FCI, the lower the number, the better the condition, or relative condition.

Table 2. FCI and WACS

Facility	FCI	WACS
City Hall / Station 41	0.20	3.15
City Hall Annex	0.26	3.43
Community Center	0.26	3.45
Fire Station 42	0.13	2.78
Fire Station 43	0.13	2.83
Lacamas Lake Lodge	0.07	2.21
Library	0.12	2.68
Police Station	0.11	2.53
Mobile Office	0.16	3.11
Public Works Operations Center	0.13	2.76
Scout Hall	0.20	3.54
Wastewater Treatment Plant		
Bio-solids Dryer Building	0.07	2.52
Control Building	0.05	3.04
Digester Building	0.06	2.38
Equipment Building	0.17	3.24
Main Office	0.11	2.69
UV Building	0.09	2.71

Cost Overview

Estimated costs are *calculated* for short-term Observed Deficiencies (ODs) and *modeled* for long-term Predicted Renewals (PRs). The deficiency costs in the Facility Details Report show direct costs plus typical construction markups as well as project development markups (design, management, etc.).

Table 3 shows the total deficiencies and predicted renewals for each facility.

⁴ A full description of the scoring metrics for all subsystems can be provided upon request.

Table 3. Total ODs and PRs by Facility

Facility	Predicted Renewals 2028-2041	Observed Deficiency 2022-2027
City Hall / Station 41	\$3,518,800	\$2,804,000
City Hall Annex	\$809,600	\$1,102,000
Community Center	\$991,600	\$2,653,000
Fire Station 42	\$1,494,000	\$572,000
Fire Station 43	\$1,958,400	\$448,000
Lacamas Lake Lodge	\$420,500	\$184,000
Library	\$4,232,600	\$1,763,000
Police Station	\$2,464,800	\$538,000
Mobile Office	\$45,300	\$51,000
Public Works Operations Center	\$1,227,300	\$898,000
Scout Hall	\$121,200	\$259,000
Bio-solids Dryer Building	\$75,200	\$101,000
Control Building	\$46,600	\$228,000
Digester Building	\$73,100	\$135,000
Equipment Building	\$94,400	\$968,000
Main Office	\$142,600	\$155,000
UV Building	\$62,800	\$1,215,000

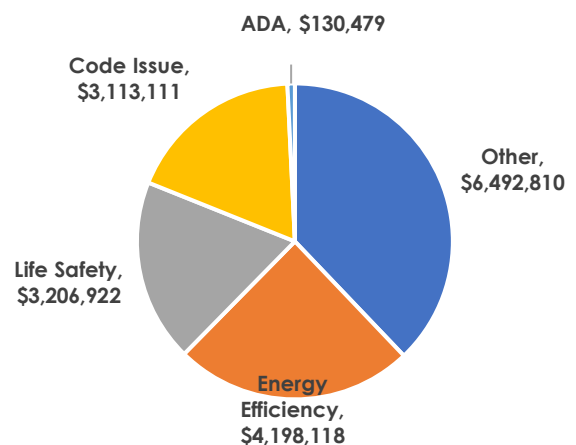
Observed Deficiencies

For a notable issue to be considered an Observed Deficiency (OD), the surveyor must think that the issue needs to be addressed within the next 5-year period, with an expected direct cost of \$5,000 or greater. Each deficiency is assigned an action type to help prioritize the order in which it should be addressed. The following pie chart shows the ODs broken out by action type.

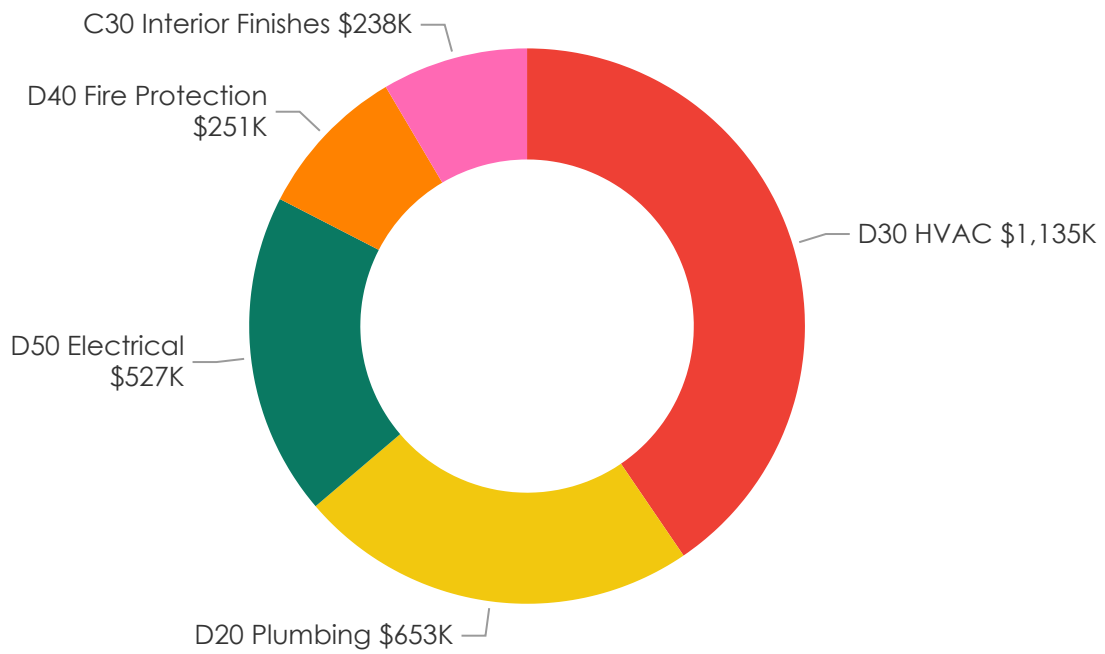
For the 2021 FCA, ODs total approximately \$17M.

Priority ODs are those in the "Life Safety" and "Code Issue" categories, which total approximately \$6.3M. Detailed descriptions, photos, and cost estimates of these deficiencies can be found in the Facility Details Report (Volume 2).

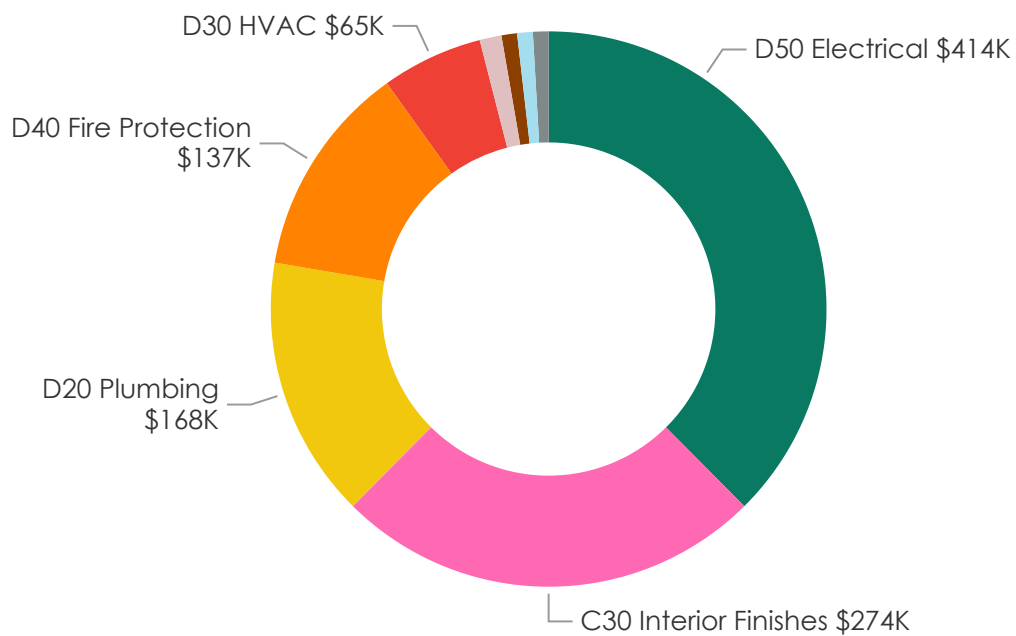
Pages 7 to 15 show a graphic representation of the ODs by Site, broken out to Uniformat Level 2 Systems. These graphics can be viewed in greater detail in the Microsoft BI Dashboard that accompanies this report.

Figure 1. Deficiencies by Action Type

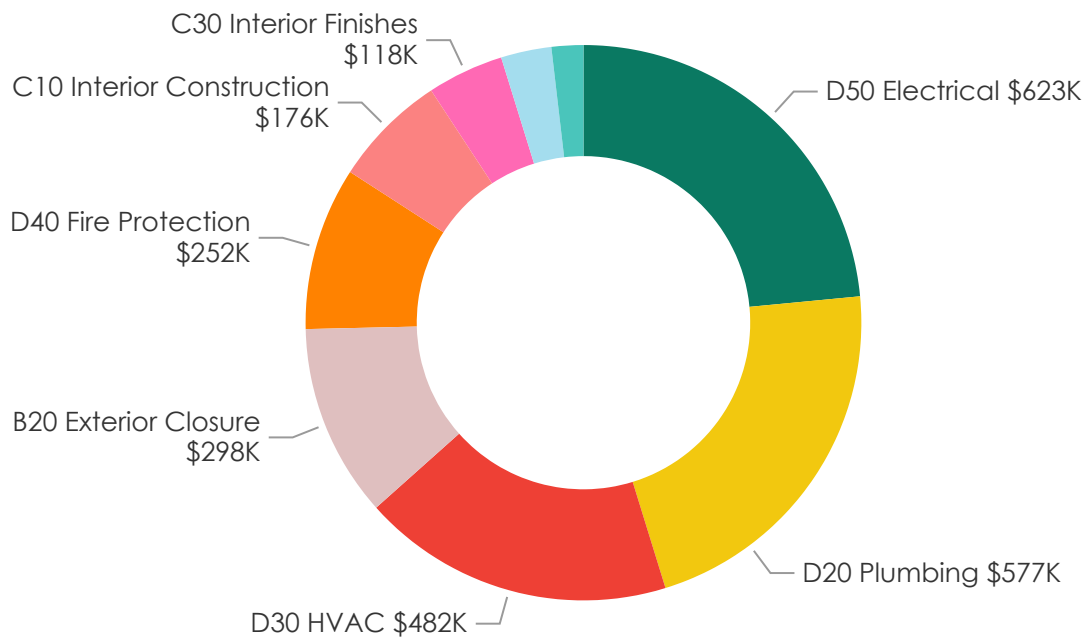
City Hall / Station 41



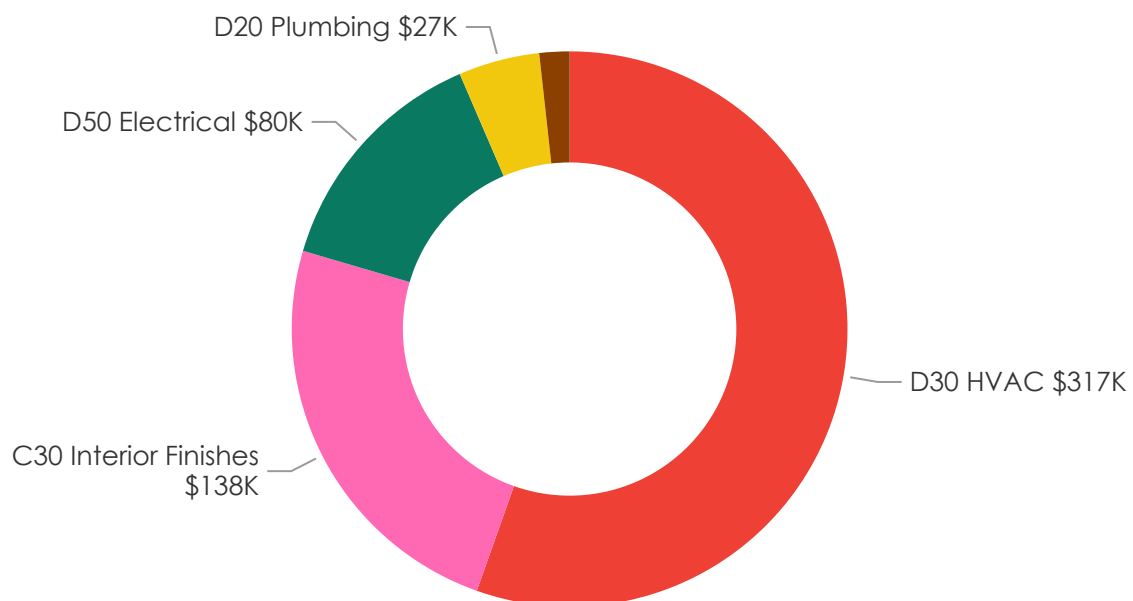
City Hall Annex



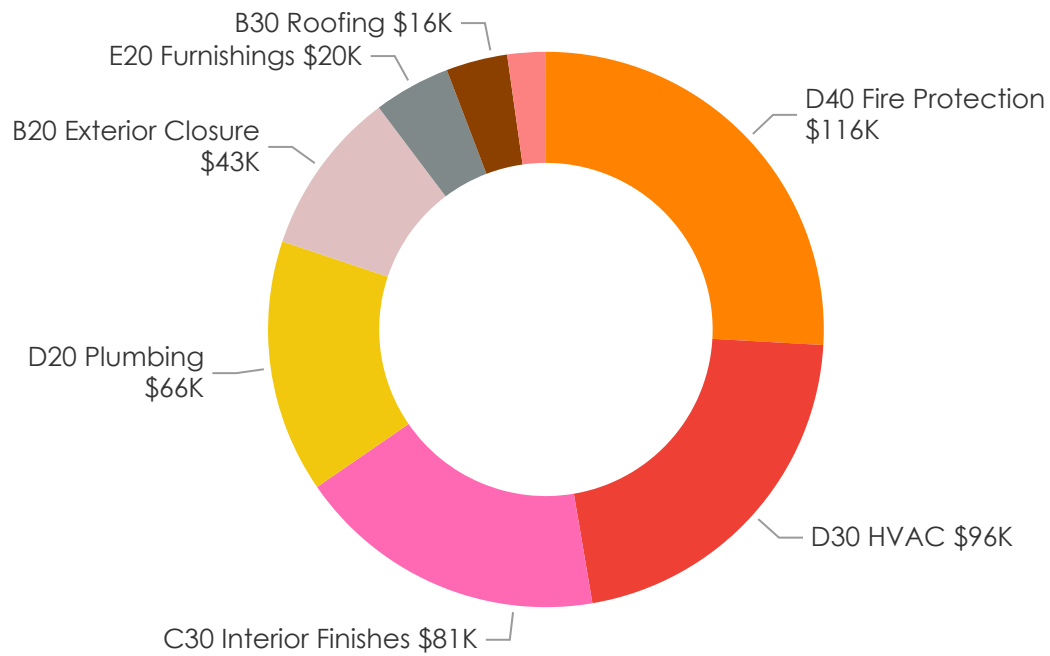
Community Center



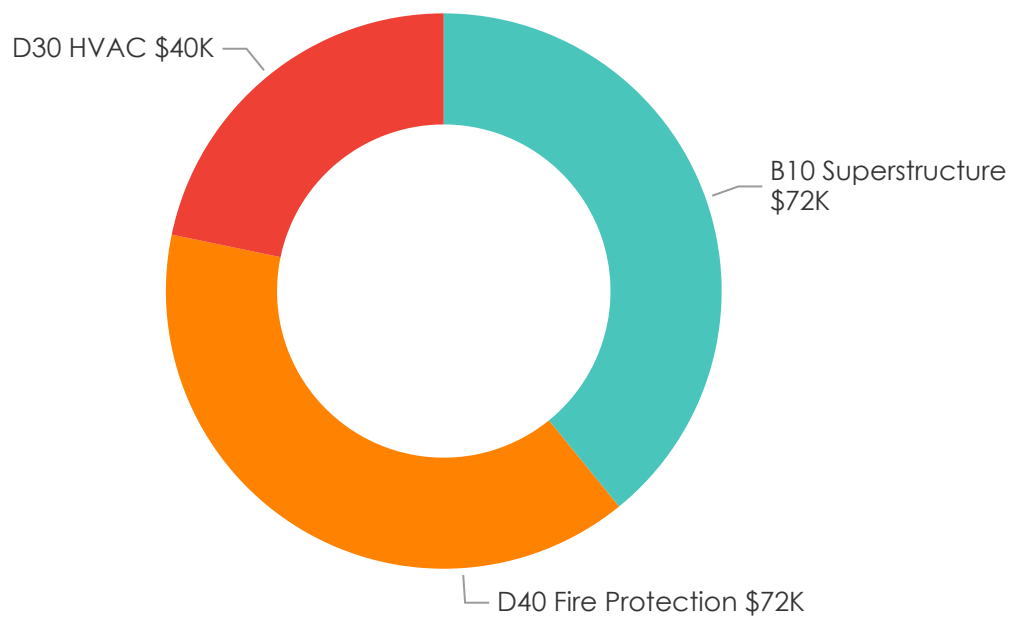
Fire Station 42



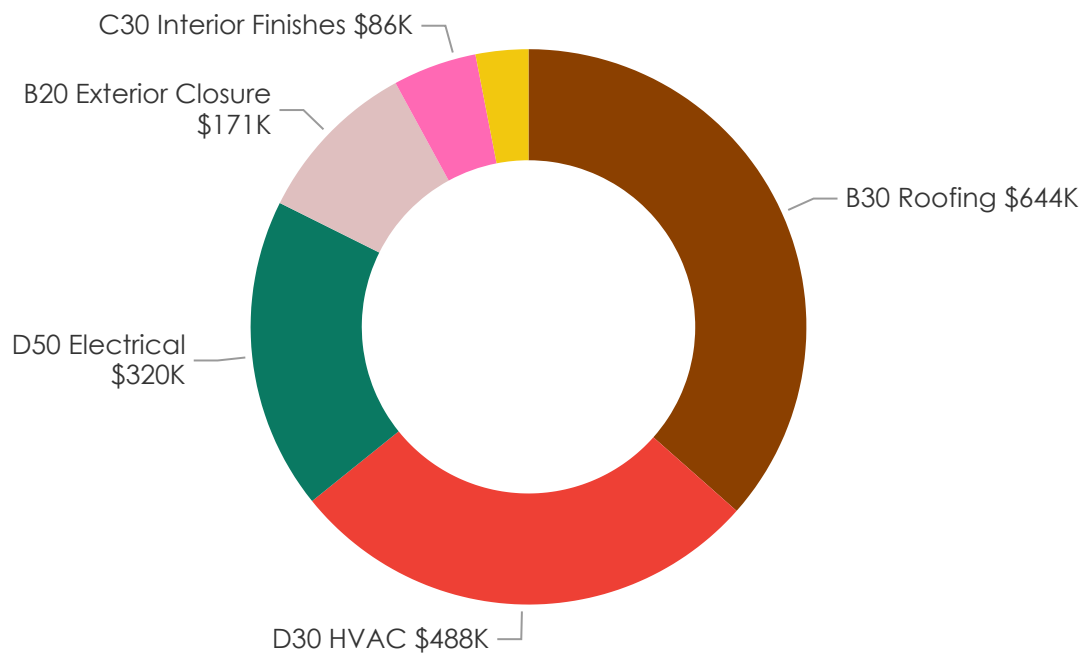
Fire Station 43



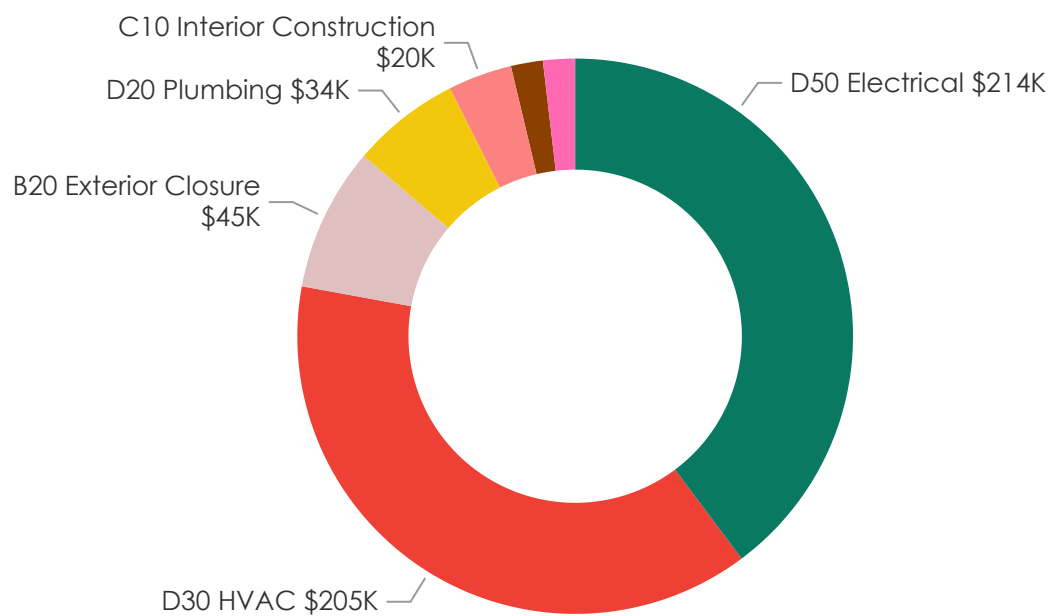
Lackamas Lake Lodge



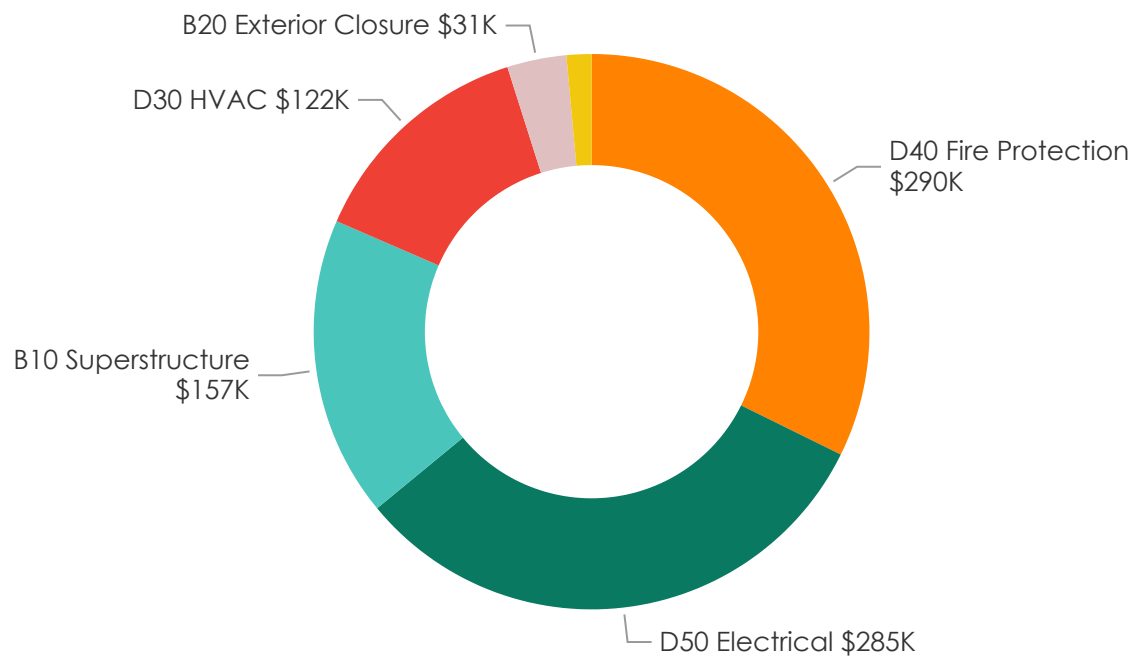
Library



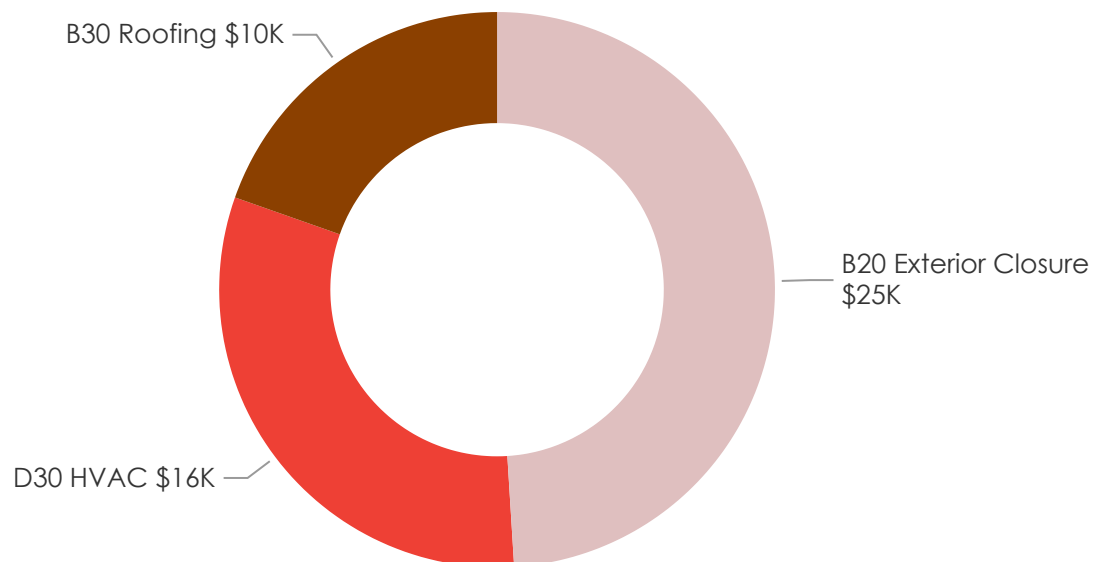
Police Station



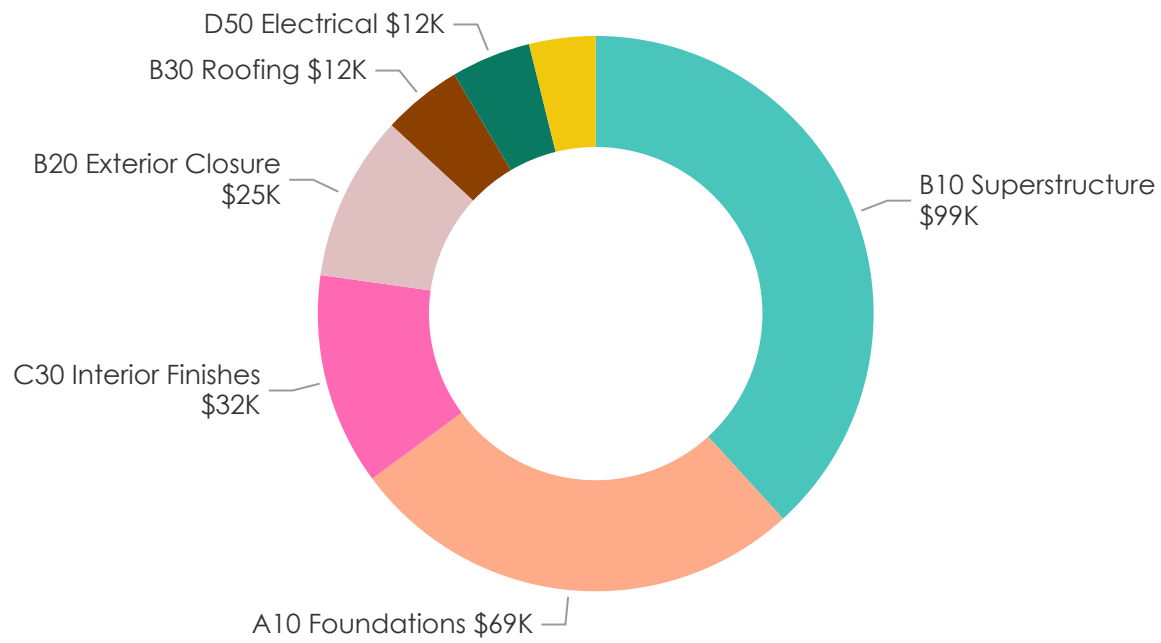
Public Works Operations Center



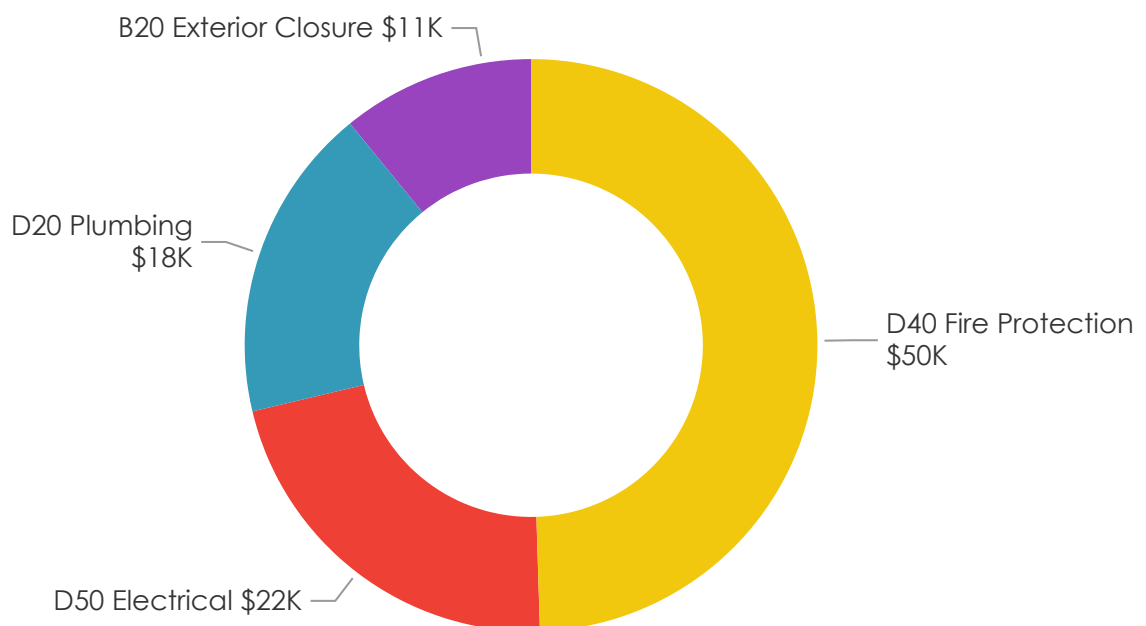
Public Works Operations Center Mobile Office



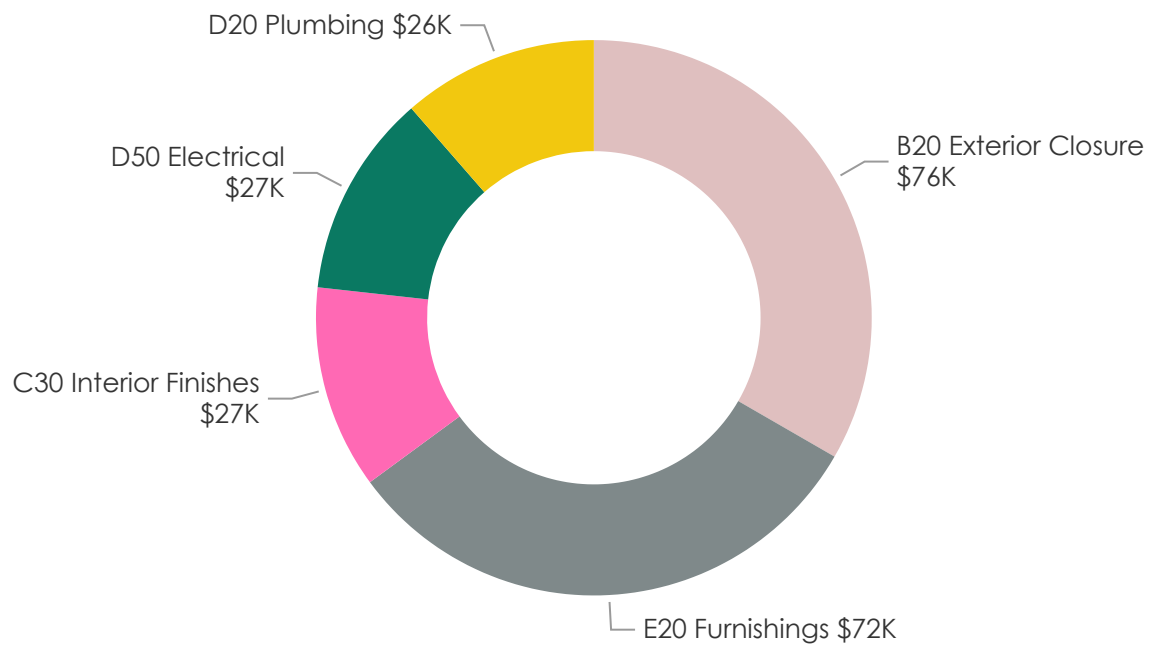
Scout Hall



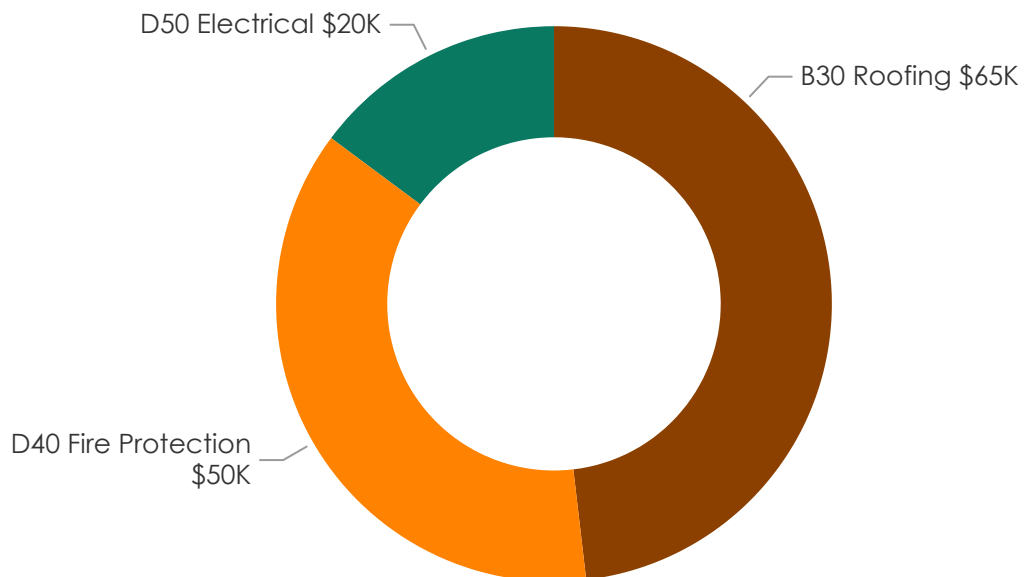
Wastewater Treatment Plant Bio-solids Dryer Building



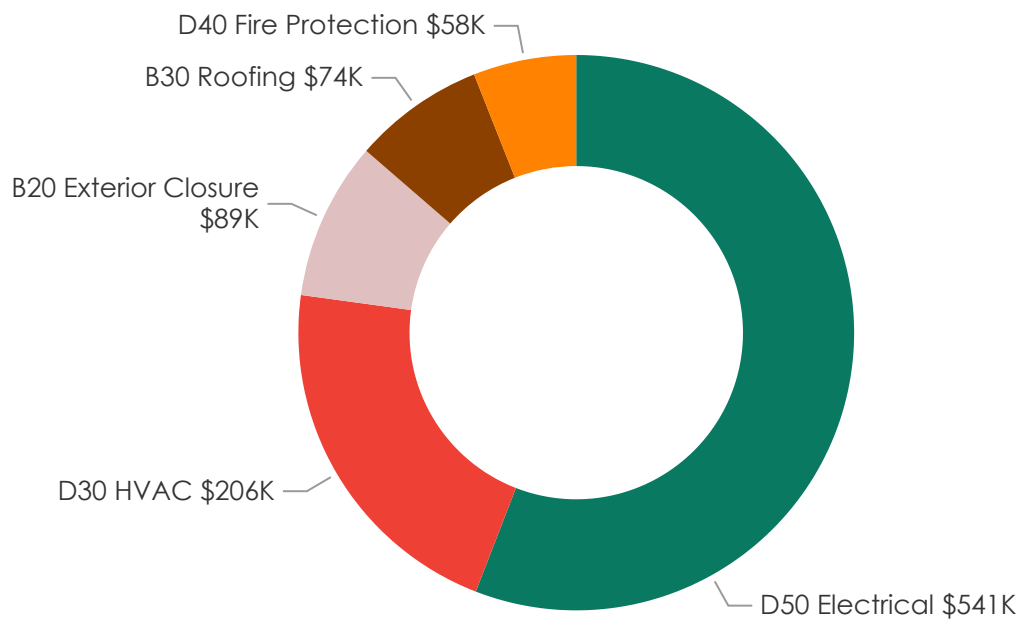
Wastewater Treatment Plant Control Building



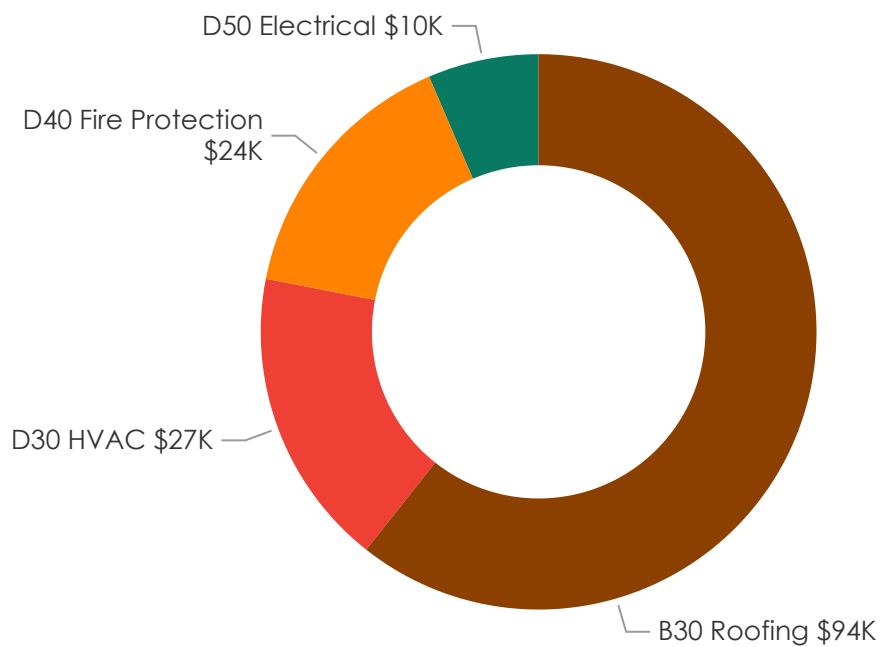
Wastewater Treatment Plant Digester Building



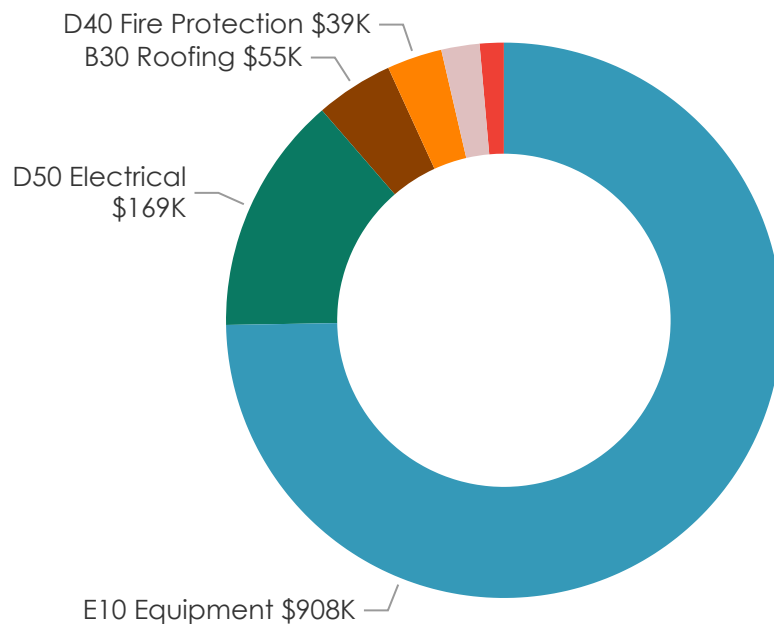
Wastewater Treatment Plant Equipment Building



Wastewater Treatment Plant Main Office



Wastewater Treatment Plant UV Building

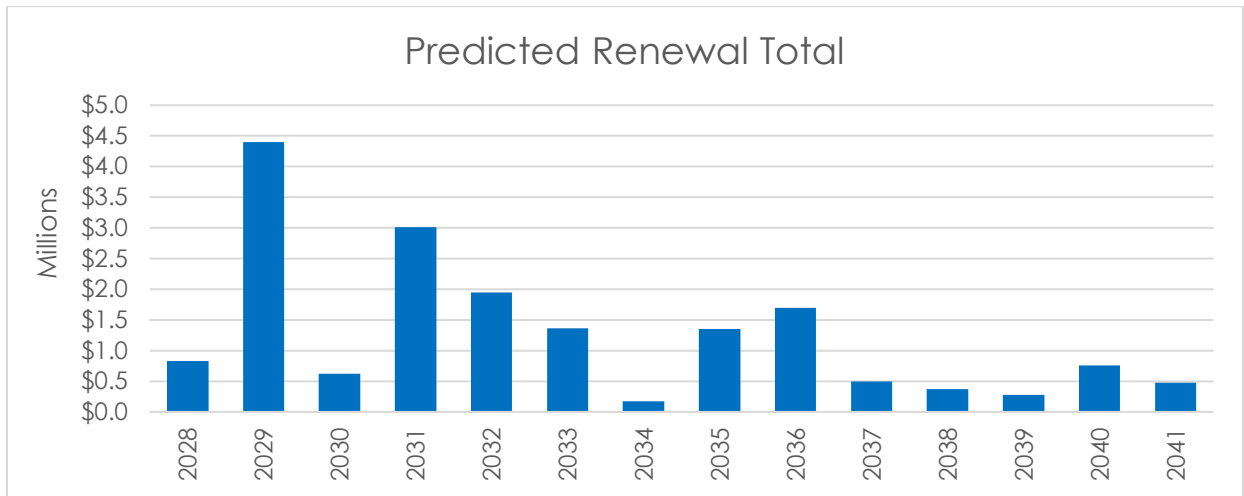


Predicted Renewals

Predicted Renewals (PRs) are modeled for the years 2028 – 2041, based on the system type, age, current condition, expected useful life, and anticipated replacement cost. These costs are based on predictive models, and therefore should be used as high-level long-term planning tool. Some systems may fail sooner or last longer than the model predicts based on maintenance practices, intensity of use, or extreme weather events.

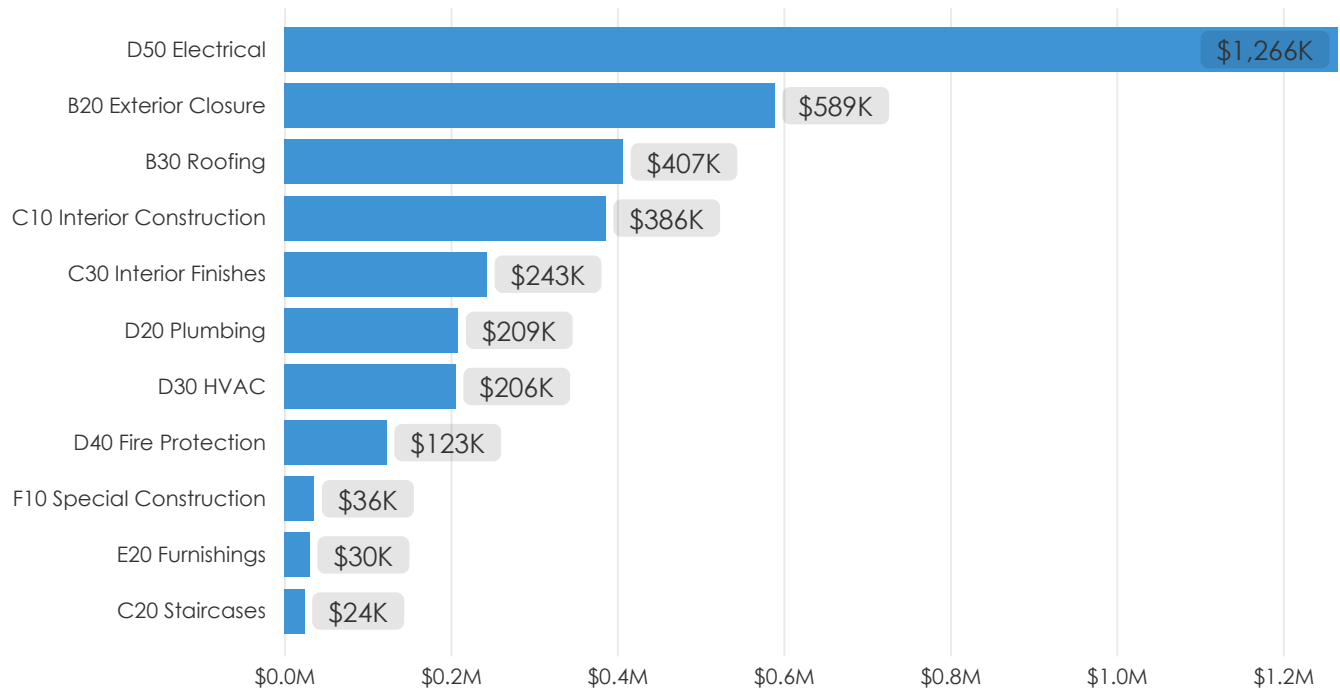
For the time period of 2028 – 2041, the estimated PR cost is approximately \$18M. The highest cost year is expected to be 2029 at just under \$4.5M. The detailed PR table included in the Appendix shows these PRs broken out by facility, subsystem, and year.

Figure 2. Predicted Renewal Totals by Year

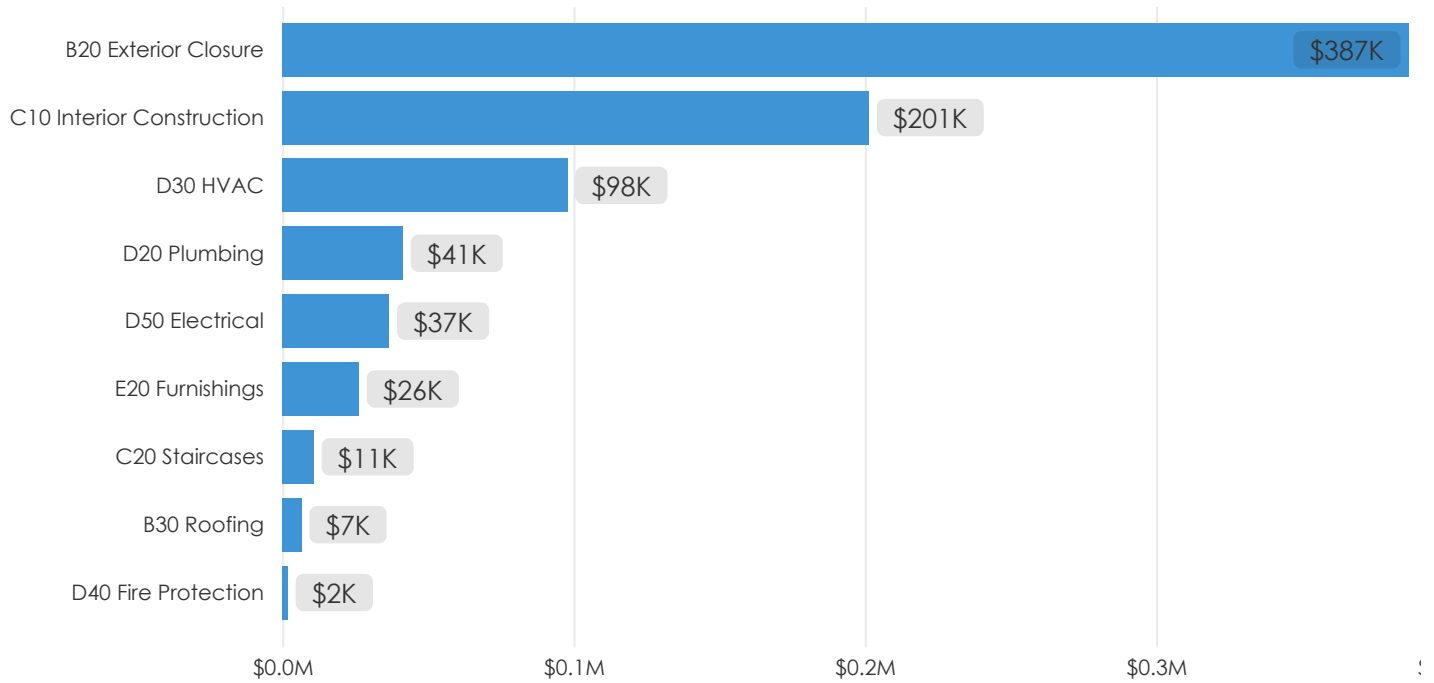


Pages 17 to 25 show a graphic representation of the total predicted renewals by site, broken out by Uniformat Level 2 categories.

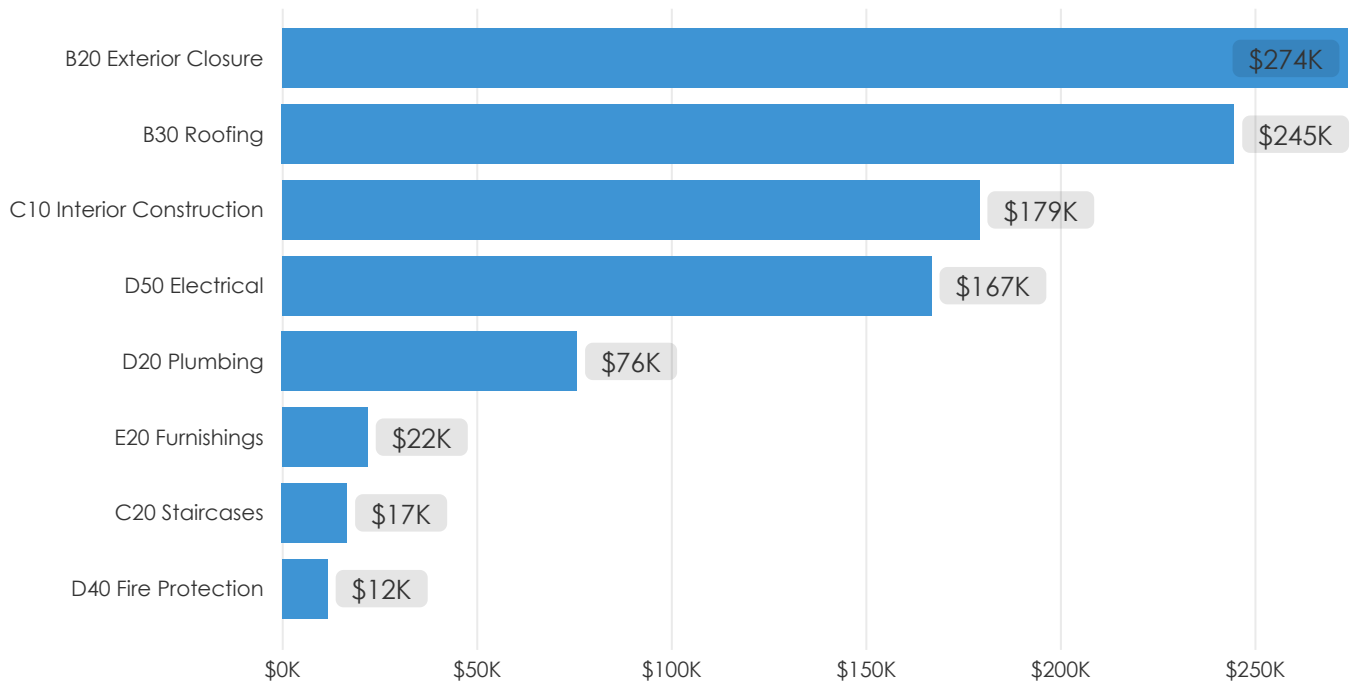
City Hall / Station 41



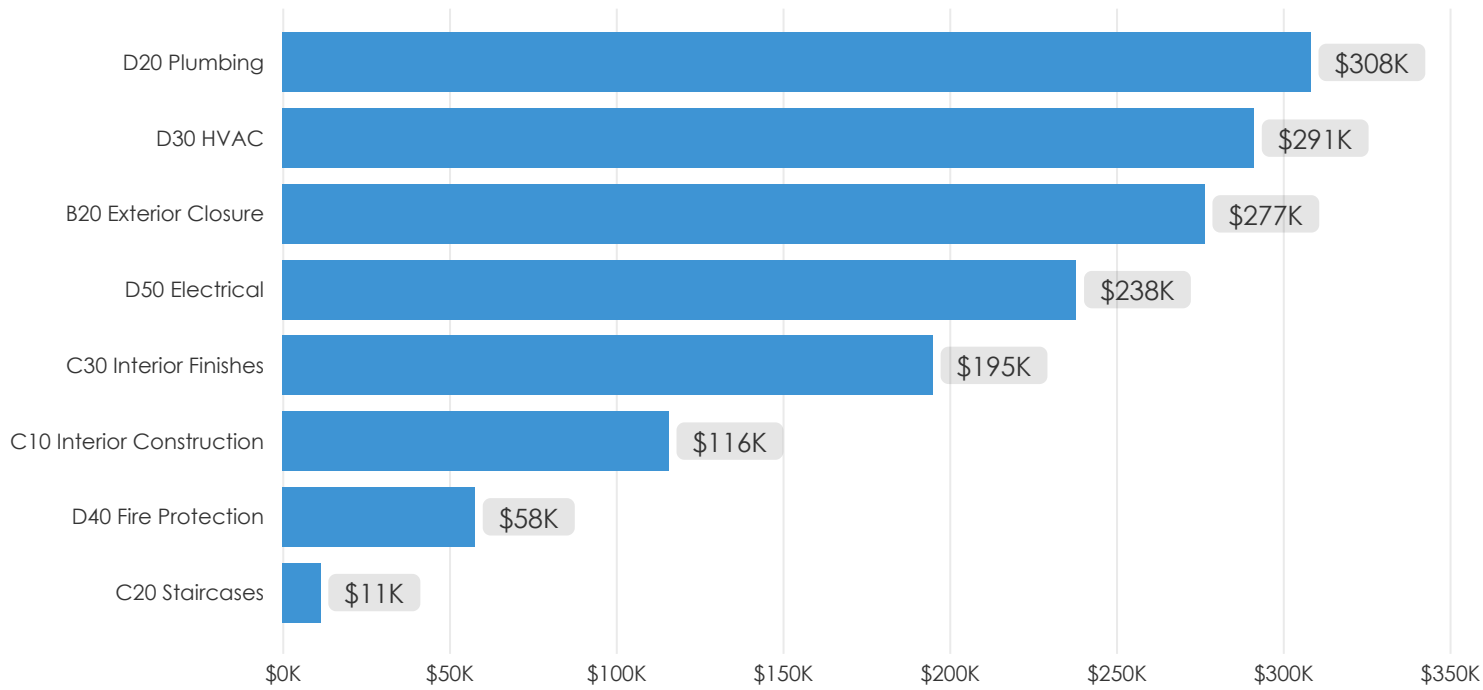
City Hall Annex



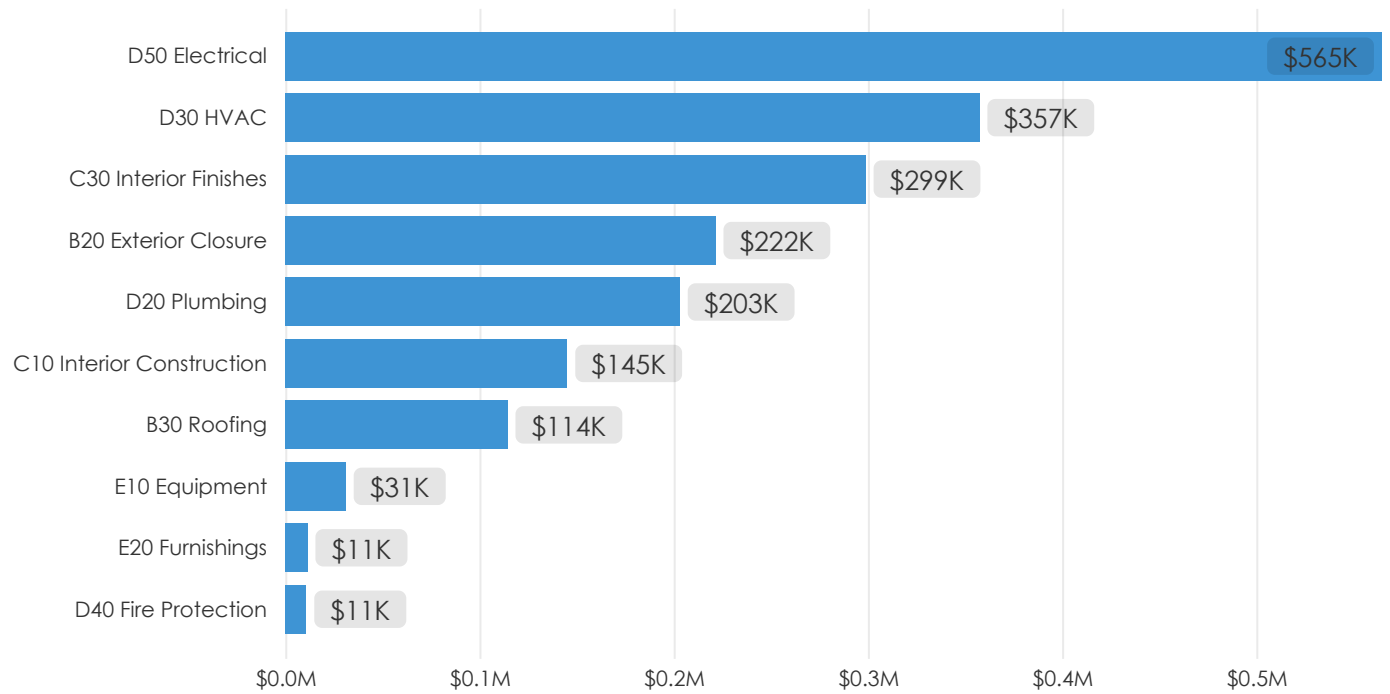
Community Center



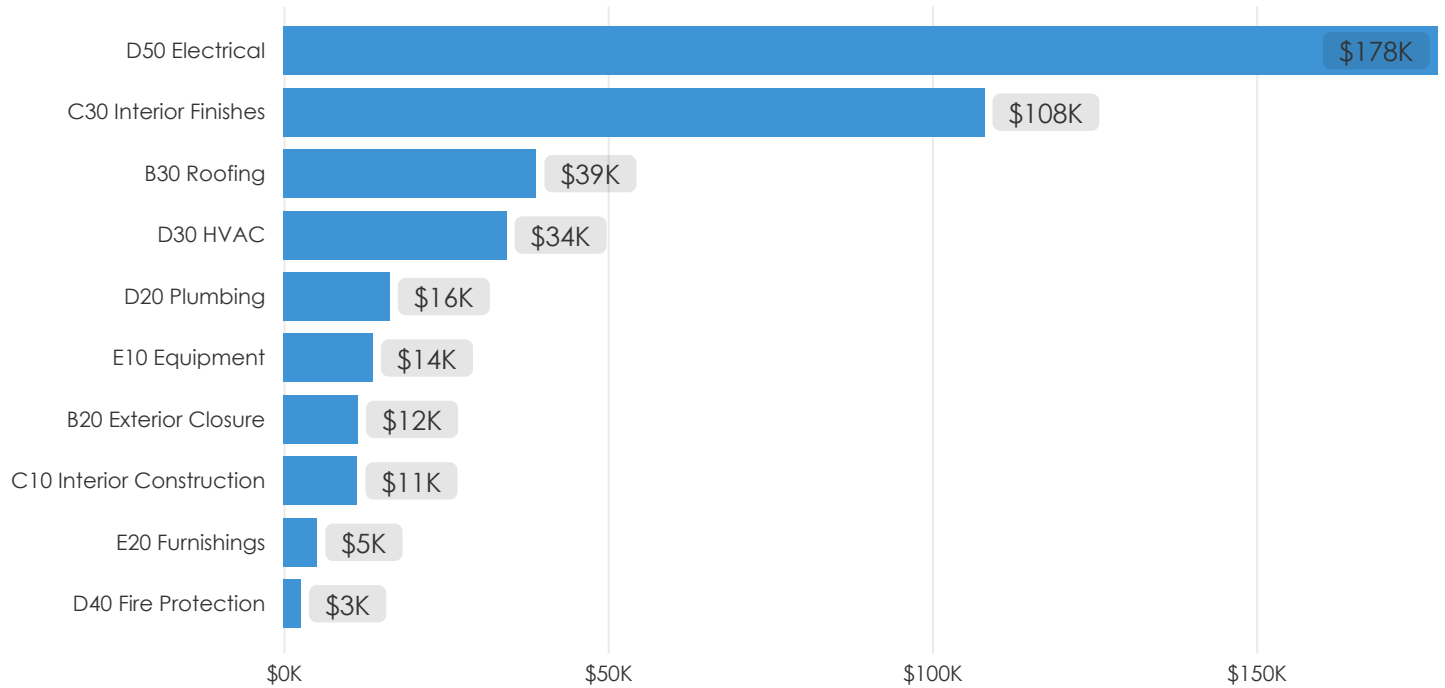
Fire Station 42



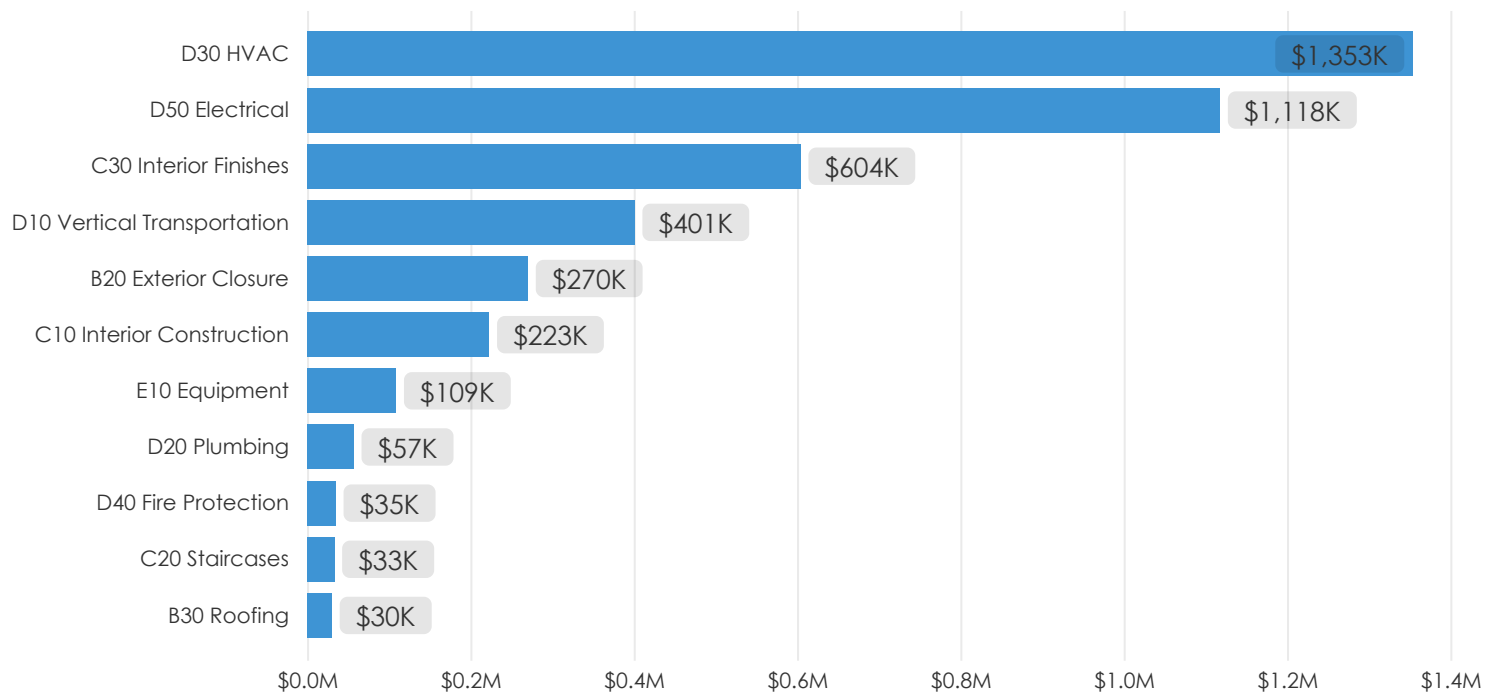
Fire Station 43



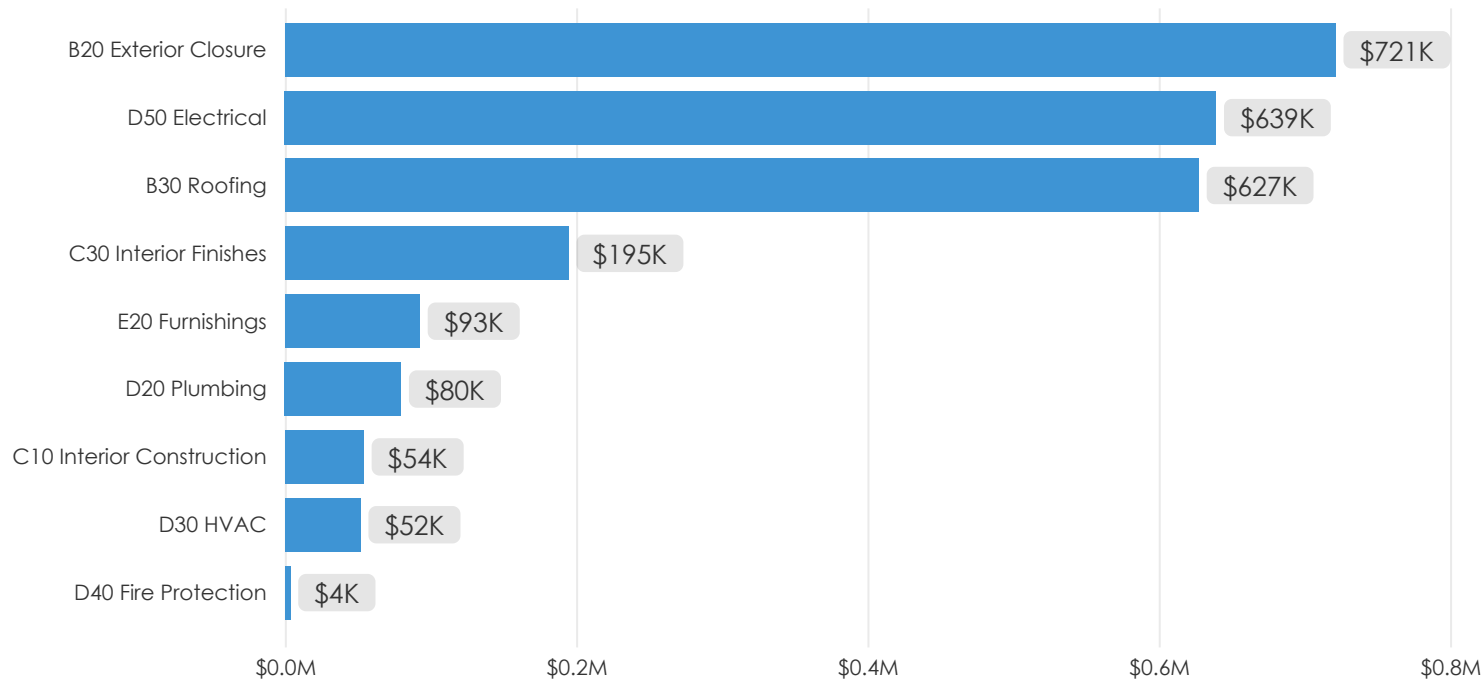
Lackamas Lake Lodge



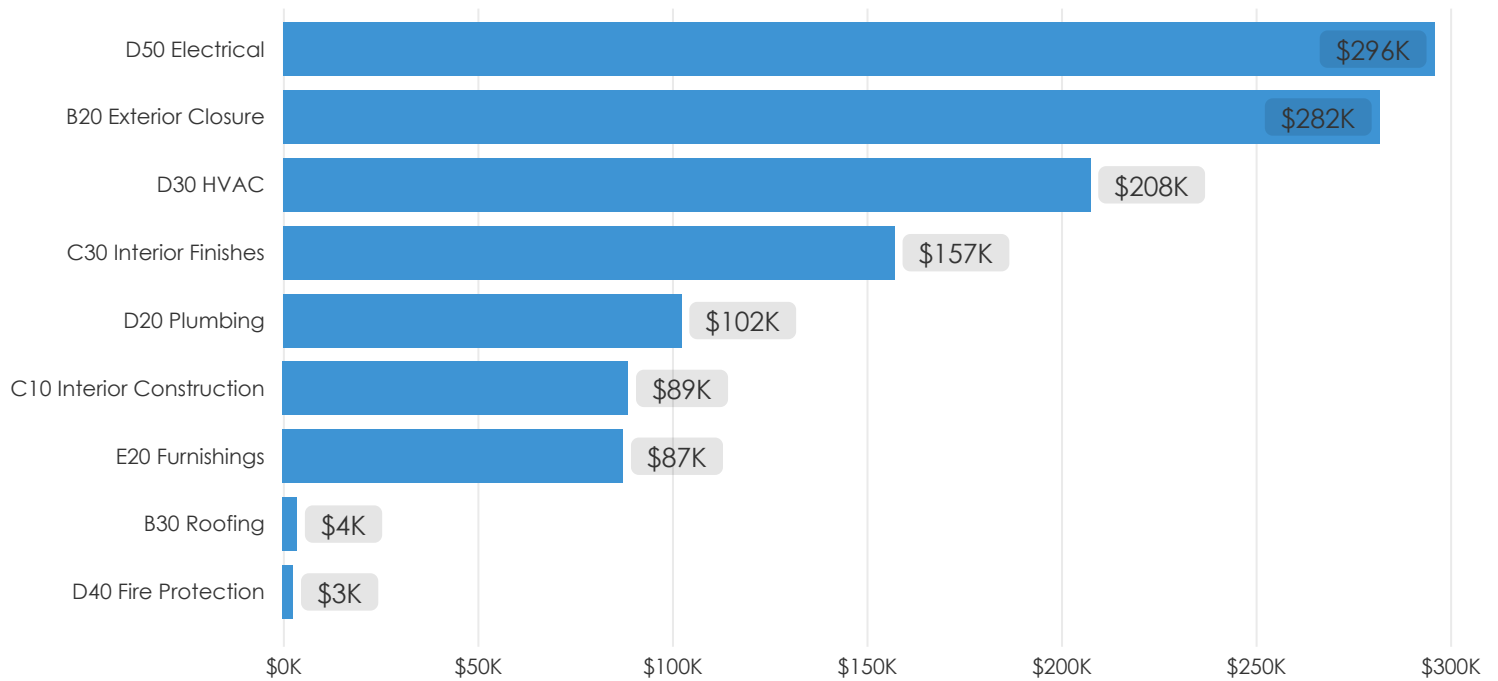
Library



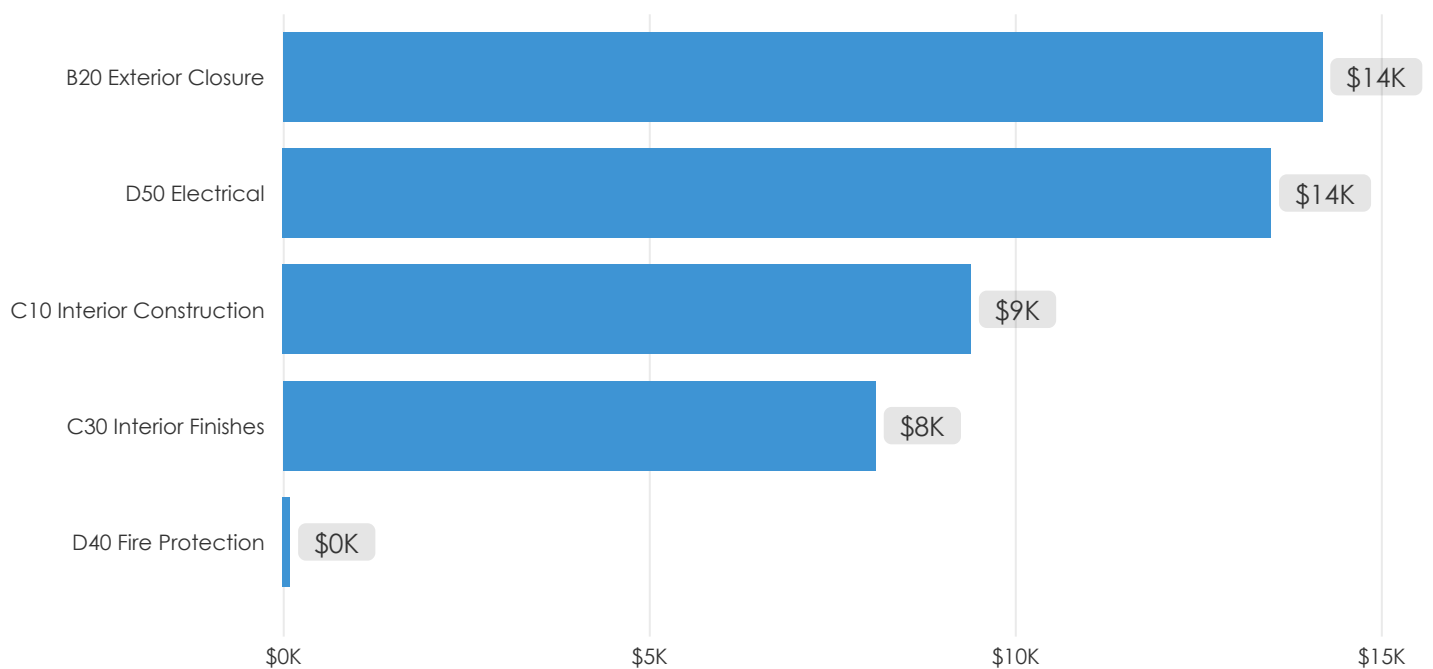
Police Station



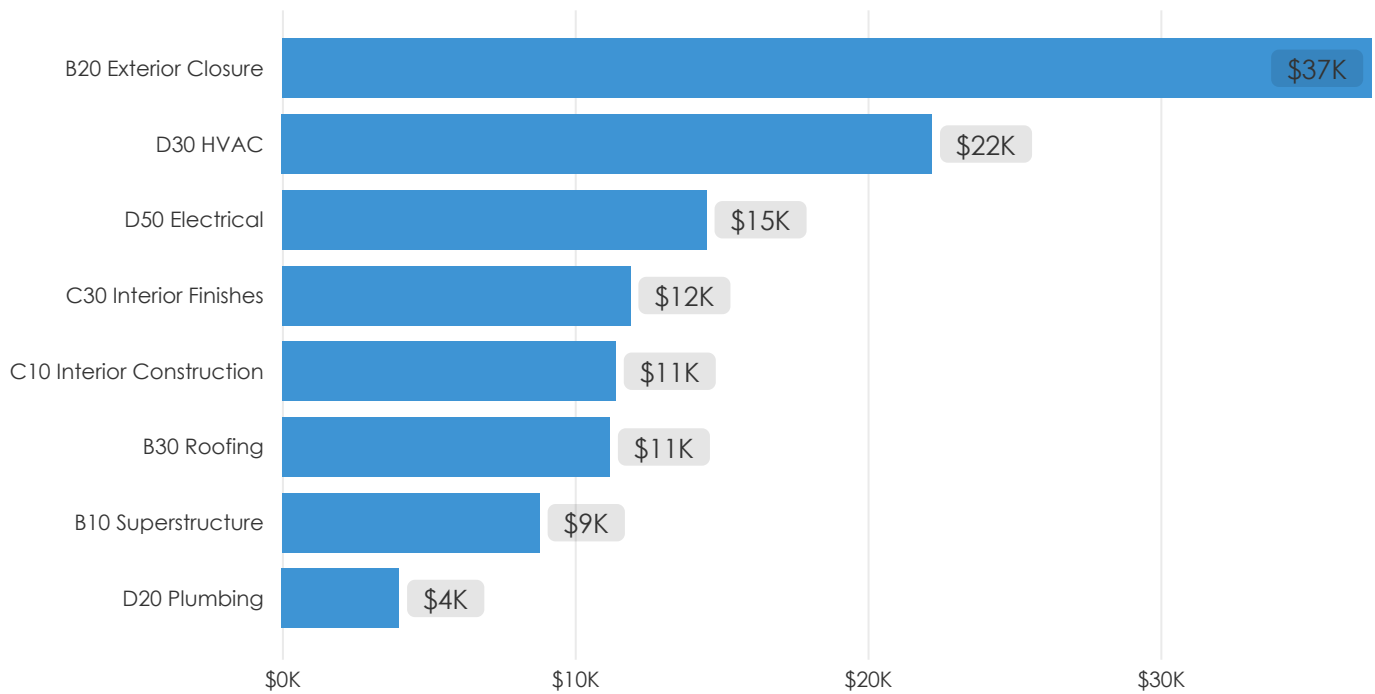
Public Works Operations Center



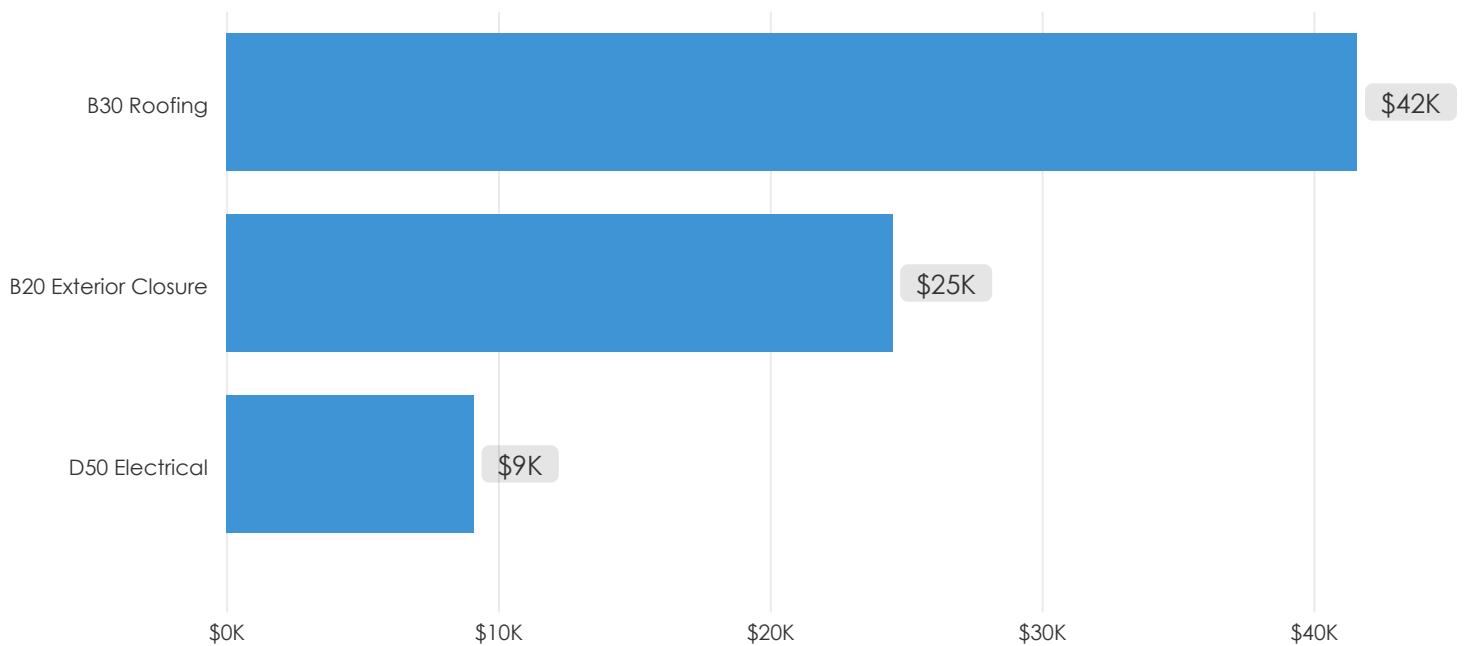
Public Works Operations Center Mobile Office



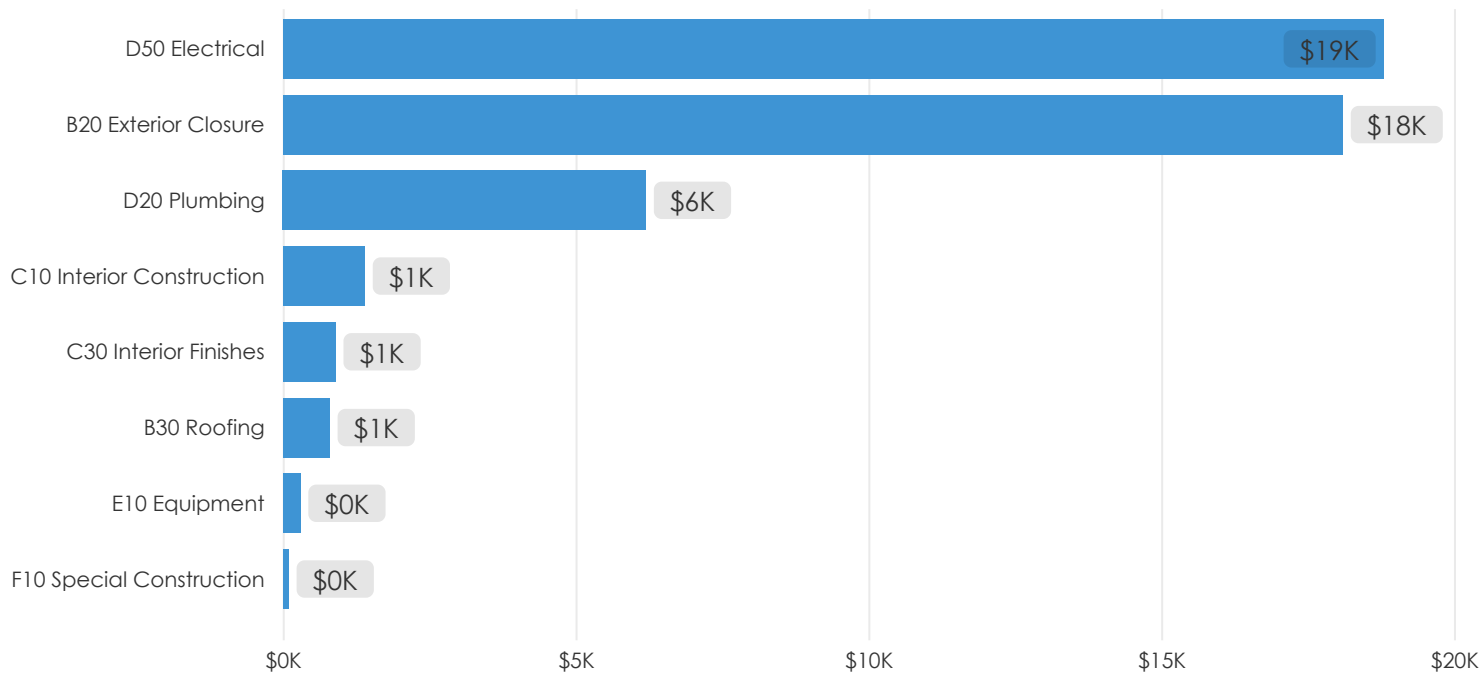
Scout Hall



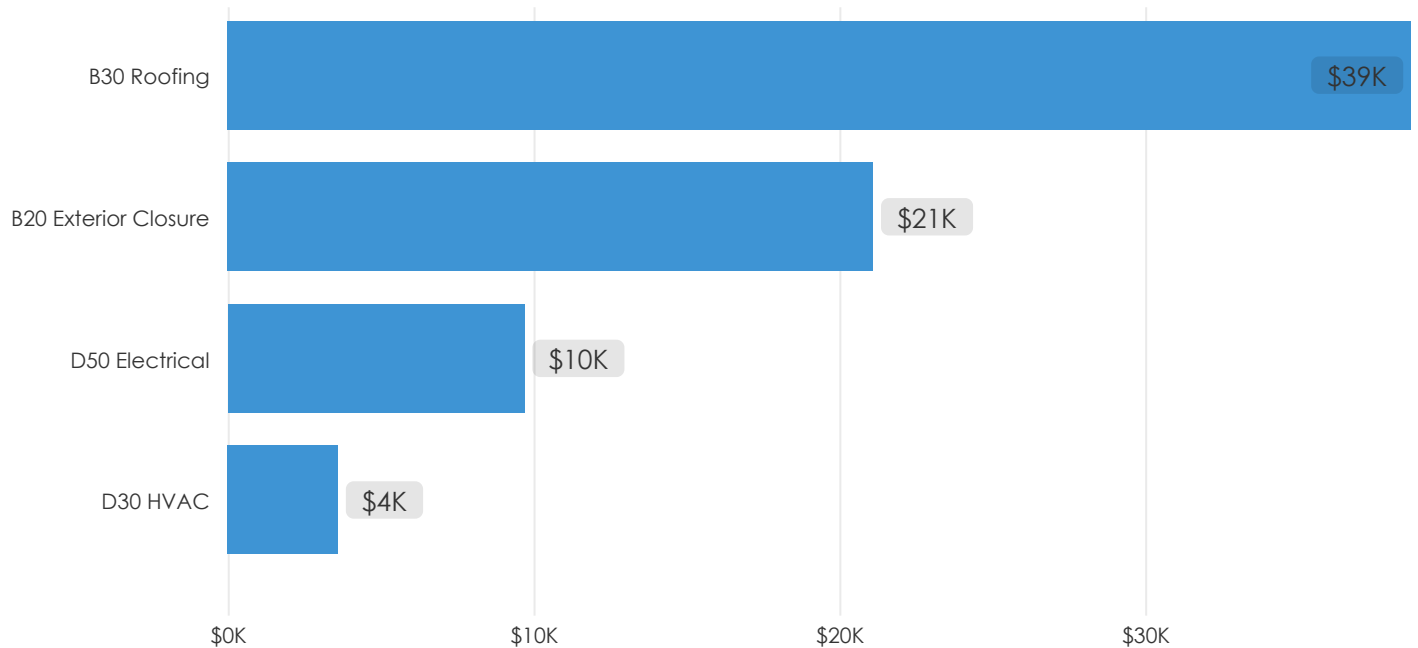
Wastewater Treatment Plant Bio-solids Dryer Building



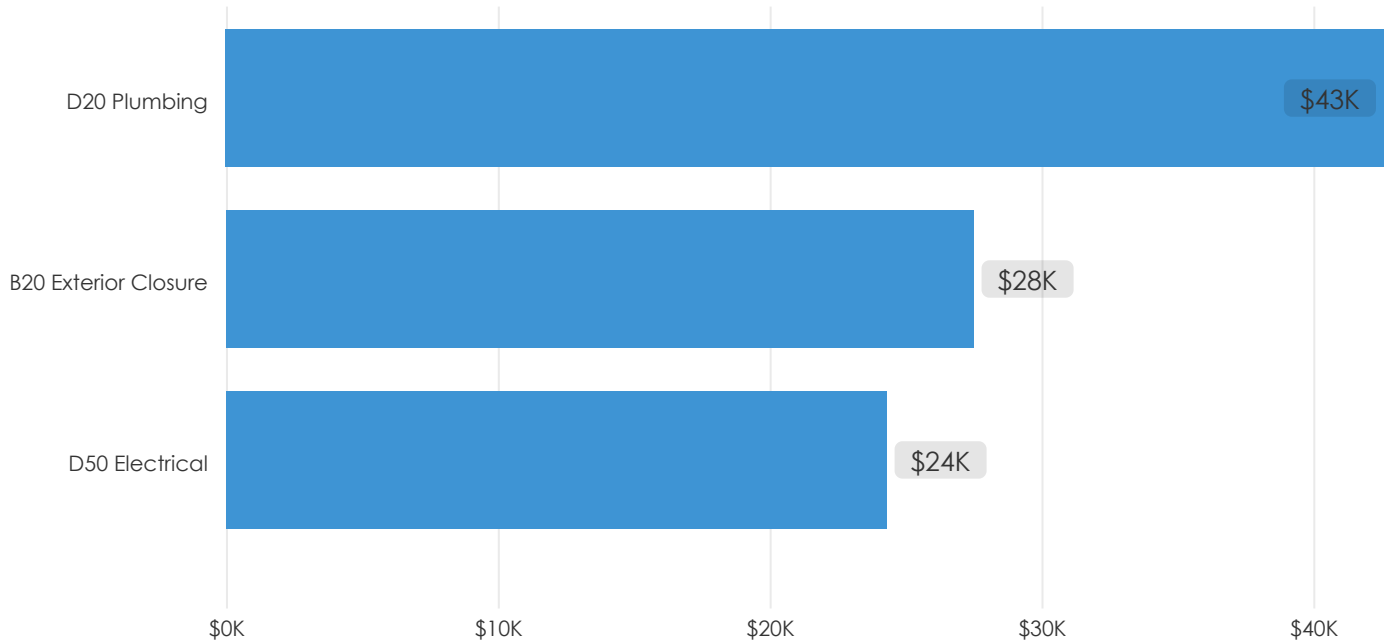
Wastewater Treatment Plant Control Building



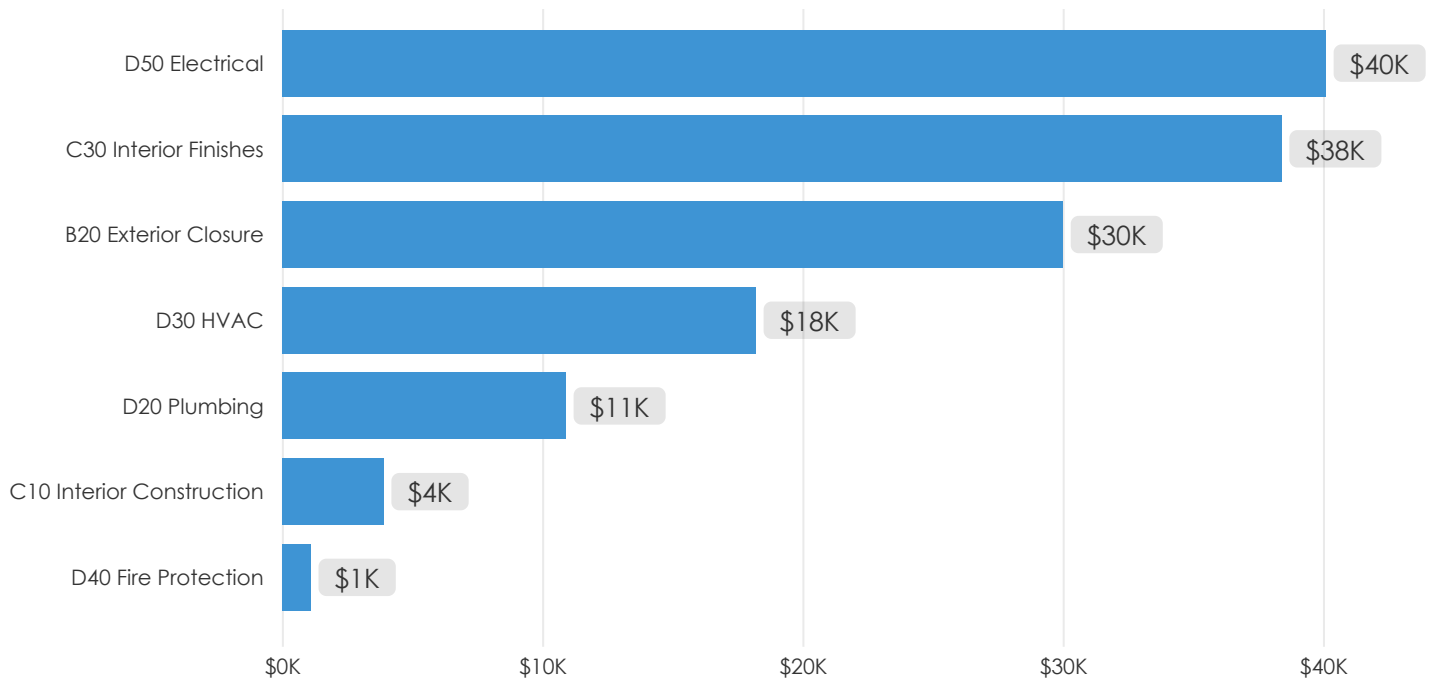
Wastewater Treatment Plant Digester Building



Wastewater Treatment Plant Equipment Building



Wastewater Treatment Plant Main Office



Wastewater Treatment Plant

UV Building

