



KING COUNTY FIRE PROTECTION DISTRICT NO.16

7220 NE 181st Street
KENMORE, WA 98028

BUSINESS: 425-354-1780 FAX: 425-354-1781

MINUTES

September 15, 2020

Joint Regular Meeting of the Boards of Fire Commissioners Northshore Fire Department and Woodinville Fire & Rescue and Board of Commissioners Regular Meeting at Northshore Fire Department's Headquarters Station 51 Virtual Meeting via Zoom

I. OPENING OF JOINT NORTHSHORE WOODINVILLE FIRE & RESCUE MEETING

1.1 Roll Call

Chair Dave Maehren called the meeting to order at 5:04 PM.

Persons in attendance were Commissioners Rick Verlinda, Josh Pratt, Don Ellis, Rick Webster, and Dave Maehren. Also present was Fire Chief Greg Ahearn, Deputy Chief Doug McDonald, Legal Counsel Matt Paxton, Interim Board Secretary Dawn Killion, and 7 members of the public.

Additional persons in attendance for Woodinville Fire & Rescue were Commissioners Roger Collins, Mike Millman, Tim Osgood, Derek van Veen, and Doug Halbert. Also present, CAO Montegary, and Executive Assistant Frisch, Chief Davis.

II. PUBLIC COMMENT

2.1 Kenmore resident Todd Wollum

- Mr. Wollum made public comments addressing the merger

Jake Ware, Local 2950 Vice President made public comments

- Mr. Ware read a statement from Woodinville Fire & Rescue and Northshore Fire Department Local Presidents

III. APPROVAL OF THE AGENDA

- ##### **3.1**
- Commissioner Verlinda requested the addition of section 4.3 to discuss matters related to the Fire Marshal vacancy.

Commissioner Collins moved to approve the agenda as amended. Commissioner Webster seconded. The motion passed 10-0

IV. BOARD DISCUSSION AND POSSIBLE ACTION ITEMS

4.1 Merger vs. Merging District Discussion

- Commissioner Maehren talked about the approval from last night's meeting
- Chief Ahearn discussed the petition and asked the Woodinville Fire & Rescue board to accept
- Commissioner Collins made comments about the process
- Commissioner Millman made positive comments regarding the merger
- Commissioner Maehren talked about the voting and brought up the possibility of funds being used to pay down the NSFD bond and asked for a written agreement
- Commissioner Osgood had objections to a written agreement for funds being used for paying another agency's debt
- Commissioner Collins nominated Commissioners Millman and Commissioner Halbert for the merger sub-committee

Commissioner Webster moved to approve the Petition for merger as presented. Commissioner Pratt seconded. Motion passes, 3 Yes (Commissioners Webster, Pratt and Maehren), 1 No (Commissioner Ellis), 1 Abstention (Commissioner Verlinda)

Commissioner Millman moved to approve Woodinville Fire & Rescue Resolution 2020-04. Commissioner Halbert seconded. Motion passes, 4 Yes (Commissioners Millman, Halbert, van Veen, and Collins), 1 Abstention (Commissioner Osgood)

4.2 Merger Next Steps Discussion

A. Community Communication

- Chief Ahearn indicated he met with Lis Loomis and with reps from both unions and other district employees on an intake call and began the steps of developing a communication plan within the coming weeks

B. AV Capture All

- Commissioner Maehren went over the ability to have AV Capture All joint meeting agenda and recordings added to Woodinville Fire & Rescue

C. Merger Sub-Committee Representatives

- Commissioner Maehren reiterated that Commissioners Webster and Pratt are the representatives for Northshore Fire Department and that Commissioner Collins identified that Commissioners Halbert and Millman are the Woodinville Fire & Rescue representatives
- Commissioner Maehren also stated that Deputy Chief McDonald would be part of the sub-committee

D. Contract for Services Sub-Committee Representatives

E. Next joint Meeting Agenda Items

- Report back from Communications Sub-Committee
- Report from Chief regarding communications within departments
- Executive session regarding the labor unions and joint negotiations

4.3 Fire Marshal Vacancy – Update

- Chief Ahearn talked about the current contract with FM Noble and talked about the next steps in engaging the services of the Assistant Fire Marshal from Woodinville

ADJOURN JOINT MEETING

The meeting adjourned at 6:18PM

V. OPEN REGULAR NORTHSORE BOARD MEETING

5.1 Roll call

Chair Dave Maehren called the meeting to order at 6:28 PM

Persons in attendance were Commissioners Rick Verlinda, Rick Webster, and Dave Maehren. Also present was Fire Chief Greg Ahearn, Deputy Chief Doug McDonald, Legal Counsel Matt Paxton, Interim Board Secretary Dawn Killion, and 3 members of the public. Commissioners Pratt & Ellis were away from keyboard during roll call.

VI. PUBLIC COMMENT

6.1 No additional requests for public comment received

VII. APPROVAL OF THE AGENDA

No additions to the agenda requested

Commissioner Verlinda moved to approve the agenda as presented. Commissioner Webster seconded. The motion passed 3-0.

Commissioners Ellis and Pratt returned from being away from keyboard.

VIII. BOARD DISCUSSION AND POSSIBLE ACTION ITEMS

8.1 Facilities Reserve Fund Discussion

- Commissioner Maehren went over some of the options for the Facilities Reserve Fund
- Commissioner Webster suggested that we put aside more funds for facility reserves as costs are increasing
- Commissioner Verlinda asked a question about Woodinville Fire & Rescue's facility funding costs and if they use a consultant of Chief Ahearn. Chief Ahearn responded that they did not use a consultant.
- Commissioner Maehren suggested that we reduce the loss of revenue fund from 25% to 20% to help fund the facility reserve fund
- The board directed Chief Ahearn to fully fund the facility reserve fund and let them know what that amount would be

8.2 Board Budget Proposals

- Commissioner Maehren asked to have the Policies uploaded onto the website
- Deputy Chief McDonald suggested that anything in the Policies that would be Homeland Security risk not be published on the website. The board agreed.

8.3 Station 54 Discussion

- Commissioner Maehren mentioned a letter from City of Kenmore Public Works department asking if we wanted to sell the building. Commissioner Maehren stated

we should consider retaining ownership of that building in the event we want to put an additional station there.

- Commissioner Maehren suggest leasing the site to City of Kenmore if they do want a Public Works building there.
- Commissioner Verlinda mentioned concerns with use permits and not keeping it as being zoned a fire station.
- Commissioner Pratt said he did not see that location becoming a fire station again
- Commissioner Maehren asked how to respond to the letter received from Brian Hamson, and also how to respond to our renter

8.4 Benefit Charge Contract for Services

- Chief Ahearn discussed the contract for services with Neil Blindheim

Commissioner Webster moved to approve the benefit charge contract for services. Commissioner Verlinda seconded. The motion passed 5-0.

8.5 Board Retreat Discussion

- Chief Ahearn looking for guidance from the board on a retreat. He mentioned a suggestion from Legal Counsel Paxton on a consultant for the retreat. He also mentioned that the cost might be upwards of \$15,000
- Commissioner Verlinda suggested seeing when the consultant would be available, and also a location that would be compliant in the COVID-19 rules

8.6 Website Updates

- Chief Ahearn went through some of the recent changes made to the website and that we would be working with Ms. Loomis to make sure the website is current and the information accurate

IX. CONSENT AGENDA

9.1 Vouchers

- The General Fund Vouchers totaled \$58,695.50 and Reserve Fund Vouchers totaled \$7,394.19
- Commissioner Verlinda asked about the cancellation fee for Guardian Security. Chief Ahearn responded that it was due to the switch in service to the new Fire Alarm Monitoring company with the remodel.
- Commissioner Maehren suggested Chief Ahearn try to dispute the charge so it is not so high
- Commissioner Maehren asked to remove that voucher.

Commissioner Webster moved to approve the consent calendar with the removal of the Guardian Security Bill for Cancellation. Commissioner Ellis seconded. The motion passed 5-0

X. REPORTS

10.1 Fire Chief Report

- Deputy Chief McDonald talked about the new recruits and how they are progressing so far at the 20-week Fire Academy

- Commissioner Maehren asked about the hours for the NEMCO food drive coming up this week

There were no further additions or questions regarding the written Fire Chief's report.

10.2 Commissioner Reports

- Nothing to report

10.3 Legal Counsel Reports

- Nothing to report

XI. UPCOMING BOARD AGENDAS

11.1 Setting of Future Meeting Agenda(s)

- Budget
- Sub Committee Reports
- Executive Session Joint Meeting

11.2 Merger Discussion

- Commissioner Pratt asked about the next date for the subcommittee meetings

XII. ADJOURNMENT

The meeting adjourned at 7:23PM

NEXT MEETING DATE

The next regularly scheduled Commissioners meeting is for October 6, 2020 at 5:00PM.

Attachments: Agenda and Fire Chief's Report

BOARD OF COMMISSIONERS

RICK VERLINDA, Member

JOSH PRATT, Member

DON ELLIS, Member

RICK WEBSTER, Member

DAVID MAEHREN, Member

ATTEST

DAWN KILLION, Interim Board Secretary

King County Fire Protection District No. 16

Adopted at a Regular Meeting of the Board of Commissioners on October 20, 2020

From: [Rick Verlinda](#)
To: [Dawn Killion](#)
Subject: RE: Electronic Signatures - Documents Approved 10/20/2020
Date: Wednesday, October 21, 2020 9:37:35 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

The following documents are Approved and Electronically Signed this 21st day of October, 2020, by Commissioner Richard Verlinda.

- **AP_NOSHRFIR_APSUPINV_20201020090023 RES Fund**
- **AP_NOSHRFIR_APSUPINV_20201020090355 GEN Fund**
- **2020-08-27 Special Meeting Minutes**
- **2020-09-01 Regular Meeting Minutes**
- **2020-09-14 Special Meeting Minutes**
- **2020-09-15 Regular Meeting Minutes**
- **2020-09-15 Special Meeting Minutes**
- **2020-10-06 Regular Meeting Minutes**

Commissioner Verlinda

From: Dawn Killion <dkillion@northshorefire.com>
Sent: Wednesday, October 21, 2020 7:48 AM
To: Commissioners <e-mailcommissioners@northshorefire.com>
Subject: Electronic Signatures - Documents Approved 10/20/2020

Good morning Commissioners,

Attached please find the vouchers and meeting minutes approved at last night's regular meeting.

At your earliest availability **today**, please respond with your electronic signature using the following verbiage:

The following documents are Approved and Electronically Signed this _____ day of _____, 2020, by Commissioner _____.

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Thank you,

Dawn Killion

Finance Specialist / Interim Board Secretary

Public Records Officer

Northshore Fire Department

7220 NE 181st ST, Kenmore, WA 98028

DIRECT: 425.354.1778

FAX: 425.354.1781

MAIN: 425.354.1780

www.northshorefire.com

dkillion@northshorefire.com



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From: [Richard Webster](#)
To: [Dawn Killion](#)
Subject: RE: Electronic Signatures - Documents Approved 10/20/2020
Date: Wednesday, October 21, 2020 8:45:02 AM
Attachments: [image001.png](#)
[image002.png](#)
[image003.png](#)
[image004.png](#)

The following documents are Approved and Electronically Signed this 21st day of October, 2020, by Commissioner Rick Webster.

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From: [Dave Maehren](#)
To: [Dawn Killion](#)
Subject: RE: Electronic Signatures - Documents Approved 10/20/2020
Date: Wednesday, October 21, 2020 10:55:23 AM
Attachments: [image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

The following documents are Approved and Electronically Signed this 21st day of October, 2020, by Commissioner David C. Maehren

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- **AP_NOSHRFIR_APSUPINV_20201020090355 GEN Fund**
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David Maehren
Fire Commissioer – Board Chair
Northshore Fire Department
Business Office 425.354.1780
Cell 206 604-3683



Proudly Serving the Citizens of Kenmore and Lake Forest Park

Electronic Privacy Notice. This e-mail, and any attachments, contains information that is, or may be, covered by electronic communications privacy laws, and is also confidential and proprietary in nature. If you are not the intended recipient, please be advised that you are legally prohibited from retaining, using, copying, distributing, or otherwise disclosing this information in any manner. Instead, please reply to the sender that you have received this communication in error, and then immediately delete it. Thank you in advance for your cooperation.

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Dawn Killion

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Northshore Fire Department Board of Commissioners

Headquarters Station 7220 NE 181st Street, Kenmore, WA

Joint Regular Meeting of the Boards of Fire Commissioners Northshore Fire Department and Woodinville Fire & Rescue and Board of Commissioners Regular Meeting

Tuesday, September 15th, 2020

5:00PM

Meeting held virtually, via Zoom

Public Comment must be submitted electronically prior to the meeting.
To submit public comment, please see instructions at the end of the agenda.

To attend this meeting live, click the link below and enter the ID & Password provided.
A recording of this meeting will also be posted in AV Capture.

Join Zoom Meeting Online at:

<https://us02web.zoom.us/j/85260432676?pwd=M1RPeIV4OWpBc1BsdVFnQjIRdWd1UT09>

Call in to Zoom Meeting at:

253-215-8782

Meeting ID: 852 6043 2676

Password: 158133

I. Open Joint Northshore Woodinville Fire & Rescue Meeting

1.1 Roll Call

II. Public Comment

2.1 Public Comment

III. Approval of Agenda

3.1 Approval of the Meeting Agenda

IV. Board Discussion and Possible Action Items

4.1 Merger vs. Merging District Discussion

4.2 Merger Next Steps Discussion

A. Community Communication



- B. AV CaptureAll
- C. Merger Sub-Committee Representatives
- D. Contract for Services Sub-Committee Representatives
- E. Next Joint Meeting Agenda Items
- F. Adjourn Joint Meeting

V. Open Regular Northshore Board Meeting

- 5.1 Roll Call

VI. Public Comment

- 6.1 Public Comment

VII. Approval of Agenda

- 7.1 Approval of the Meeting Agenda

VIII. Board Discussion and Possible Action Items

- 8.1 Facilities Reserve Fund Discussion
- 8.2 Board Budget Proposals
- 8.3 Station 54 Discussion
- 8.4 Benefit Charge Contract for Services
- 8.5 Board Retreat Discussion
- 8.6 Website Updates

IX. Consent Agenda

- 9.1 Vouchers

X. Reports

- 10.1 Fire Chief Report
- 10.2 Commissioner Reports
- 10.3 Legal Counsel Report

XI. Upcoming Board Agendas

- 11.1 Setting of Future Meeting Agenda(s)
- 11.2 Merger Discussion

XII. Adjournment

Next Regular Meeting: October 6th, 2020 at 5:00 PM



Public Comment Procedures for Virtual Meetings:

If you wish to provide public comment virtually, you may do so by submitting a written statement to dkillion@northshorefire.com. Any comments received up to one hour before the posted meeting time, will be read during the public comment period.

To ensure your comments are received and read at the proper meeting, your email must include:

- Date & Time of the meeting your comments are intended for
- Your name
- Whether or not you live in the city limits of Lake Forest Park or Kenmore
- Agenda Item and/or subject your comments refer to

Emails without this information may not be read at the meeting. Three minutes are allowed for comment. And, in accordance with normal procedure, messages of an overly repetitive or inappropriate (vulgarity) nature may be declined to be read at the discretion of the meeting Chair.

Please check the District's [AV Capture](#) for the most up-to-date information about individual meetings.

Questions? Email Interim Board Secretary Dawn Killion at dkillion@northshorefire.com

Northshore Fire District
Shoreline FD Combination Analysis Summary of Findings

9/15/2020 2:40 PM

	Forecasted Savings from NSFD and Woodinville Consolidation					
	2021	2022	2023	2024	2025	2026
Staff reductions from Combined operations						
Fire Marshall	216,688	223,188	229,884	236,781	243,884	251,201
Fire Chief	258,984	266,754	274,756	282,999	291,489	300,234
Deputy Fire Chief	273,607	281,816	290,270	298,978	307,948	317,186
Administrative Assistant	112,620	115,999	119,479	123,063	126,755	130,558
Commissioners (5)	23,314	40,247	43,659	50,535	54,233	89,861
	885,214	928,004	958,048	992,356	1,024,309	1,089,039
Labor Rate and Position Adjustments	(496,164)	(430,898)	(389,901)	(348,597)	(306,468)	(238,749)
Overhead Reductions from Combining Operations	646,261	688,892	640,912	637,288	632,989	627,978
Contributions from Excess Cash Balances	243,937	243,937	243,937	243,937	243,937	243,937
BLS Transport Revenue (Combined WRF & NSF)	365,500	374,638	384,003	393,604	403,444	413,530
	1,644,747	1,804,572	1,836,999	1,918,588	1,998,209	2,135,734
Expense savings needed for no increase in tax rates	1,007,927	1,128,322	1,239,333	1,250,752	1,318,152	1,338,021
Overage (Shortfall)	636,820	676,250	597,666	667,836	680,057	797,713
Effective tax rate (smoothed)						
Woodinville - Standalone	1.25	1.25	1.25	1.25	1.25	1.25
Northshore Fire District (including Bond) - Standalone	1.31	1.30	1.31	1.31	1.32	1.32
NSFD/WFR Combined	1.13	1.13	1.13	1.13	1.13	1.13
Combined for NSFD citizens (including Bond)	1.28	1.27	1.28	1.27	1.27	1.28

Comments

Fire Marshall - Will not replace the NSFD Fire Marshall. Will instead promote an inspector to Deputy Fire Marshall			
Fire Chief and Deputy Fire Chief - Does not plan to replace the NSFD Chief and will not fill the open Deputy position at WFR.			
Commissioners - Plans to reduce all 5 positions after combining of operations over the six year period			
Labor Rate and Position Adjustment - Adjustment of labor rates to the higher of the two departments and position changes			
Overhead reductions - Estimated reductions in overhead from combining operations			
Contributions from cash balances - WF&R and NSFD have over \$12M in combined cash balances. Upon combination the reserves will be reduced to four months of operating expenses.			
BLS Transport Revenue - See worksheet attached. The above scheduled revenue is based on the model prepared for NSFD alone but adding 1,048 additional transports for Woodinville. The model forecasted \$365,500 for 2021 and was increased by 2.5% annually for inflation. See spreadsheet attached.			
Reserves -			
Northshore has reserves for the following contingencies:		Woodinville has reserves for the following contingencies:	
Natural Disaster	250,000	Apparatus Reserve	3,739,368
Insurance	200,000	Tools & Equipment Reserve	1,343,579
Unplanned Loss of Revenue	2,293,669	Facilities Reserve	660,450
Apparatus & Equipment	575,273	Building Reserve	2,180,687
Facilities Improvement	651,980	Emergency Reserve	3,300,000
Employee Buyback of vacation & sick leave	650,000	HRA Reserve	214,580
LEOFF 1	1,830,518	VAC Leave Reserve	5,800
Cash Balance (12/31/19)	4,936,732	Sick Leave Reserve	519,275
	11,388,172	Post Retirement Medical	50,000
		LEOFF 1 Reserve	400,558
		Capital Projects Reserve	2,399
		Cash Balance (12/31/19)	7,356,347
			19,773,043
Percentage of Operating Expenses	112.9%	Percentage of Operating Expenses	128%

**WOODINVILLE FIRE & RESCUE
RESOLUTION NO. 2020-04**

**A RESOLUTION APPROVING THE MERGER OF
KING COUNTY FIRE PROTECTION DISTRICT NO. 16 INTO WOODINVILLE FIRE & RESCUE**

RECITALS

WHEREAS, on September 15, 2020, the Board of Northshore petitioned the Board of WF&R requesting that Northshore be merged into WF&R (“the Petition”); and

WHEREAS, Northshore and WF&R are within a reasonable proximity and near enough to each other so that governance, management, and services can be delivered effectively; and

WHEREAS, the merger of Northshore and WF&R would provide quantifiable service improvements or cost reductions; and

WHEREAS, the merger of Northshore and WF&R is a beneficial and equitable arrangement in terms of resource commitment, costs, and risk/exposure; and

WHEREAS, there is a comprehensive plan for implementation, with commitments from all agencies to see the merger of Northshore and WF&R through to completion; and

WHEREAS, the merger of Northshore and WF&R has a high likelihood of success that will lead to a stable and sustainable organization; and

WHEREAS, Northshore and WF&R have a shared vision of the outcome of the merger; and

WHEREAS, the merger of Northshore and WF&R provides benefits by achieving something the Districts could not achieve individually;

NOW THEREFORE, it is resolved as follows:

Section 1. The Petition of Northshore is approved as presented.

Section 2. The Fire Chief shall transmit the Petition back to Northshore with a copy of this Resolution so it may proceed with the merging procedure identified in RCW 52.06.

**ADOPTED AT A REGULAR MEETING OF THE BOARD OF FIRE COMMISSIONERS OF
WOODINVILLE FIRE & RESCUE THIS 15th day of September, 2020**

**WOODINVILLE FIRE & RESCUE
COUNTY OF KING, WASHINGTON**

Approved as to Form:

/s/ Jeffrey Ganson
Jeffrey Ganson, District Counsel

Derek van Veen, Commissioner, Position 1

Doug Halbert, Commissioner, Position 2

Timothy Osgood, Commissioner, Position 3

Michael Millman, Commissioner, Position 4

Roger Collins, Commissioner, Position 5

CERTIFICATION

I, the undersigned, Secretary of Woodinville Fire & Rescue ("WF&R") hereby certify as follows:

1. The attached copy of Resolution No. 2020-04 (the "Resolution") is a full, true, and correct copy of the Resolution duly adopted at a regular meeting of the WF&R Board of Fire Commissioners (the "Board") held on September 1, 2020 as the Resolution appears on the minute book of the District and the Resolution is now in full force and effect.
2. The regular meeting was held in accordance with the law.
3. A quorum of the members of the Board was present throughout the meeting and a majority of those members present voted in the proper manner for the adoption of the Resolution.

IN WITNESS WHEREOF, I have hereunto set my hand this 15th of September, 2020.

Nicole Frisch, Board Secretary



EXECUTIVE SUMMARY

Description

Northshore Fire Department has one station serving Lake Forest Park and Kenmore and one serving Lake Forest Park, Washington. This Reserve Study meets the requirements of the Washington Unified Common Interest Owner Act for a Level 1 Reserve Study with a site visit, and was prepared by an independent Reserve Study Professional.

Background

The Northshore Fire Department consists of Station 51 and Station 57. The headquarters are housed at Station 51, along with a training facility. Construction Station 51 was completed in 2011; construction of Station 57 was completed in 1995.

The recommended annual contribution to reserves for 2020 is \$162,300.

The prefix before the component number helps to distinguish which fire station a component references. "Stn.51" is abbreviated for Station 51 and "Stn.57" is abbreviated for Station 57.

Financial Information for the Current 2019 Fiscal Year

Reserve Account Balance on January 1, 2019	\$170,000
Annual Operating Budget	\$9,948,992
Component Inclusion Threshold (1% of the Operating Budget)	\$99,490
Annual Budgeted Contribution to Reserves (2019)	\$30,000
Remaining Contributions to Reserves for the Year	\$30,000
Planned or Implemented Special Assessment	None
Fully Funded Balance	\$942,417
Percent Funded at Time of Study	18%
Funding Status at Time of Study	High Risk for a Special Assessment

Recommended Contribution to Reserves Starting in 2020

2020 Recommended Annual Contribution Rate	\$162,300
Breakdown of the Recommended Contribution :	
2020 Recommended Contribution per Month	\$13,525
2020 Baseline Funding Plan Contribution Rate	\$153,900
2020 Full Funding Plan Contribution Rate	\$185,300

The recommended reserve contribution represents a Threshold Funding Plan to prevent special assessments over the course of the 30-year study **while maintaining a minimum reserve account balance of one year's contribution to reserves.** The fiscal year for the Reserve Study is a calendar year. Cost projection accuracy decreases into the distant future. Assumptions should be reconsidered and updated with each revision of the study.

While Northshore Fire Department is not required to comply with the Washington Unified Common Interest Owner Act, this report does comply with the requirements of RCW 64.90. Legal references to "associations" remain in the document. Northshore Fire Department is under no legal requirement to fund reserves.

**Stn.57 2.9.2 Landscaping - Maintenance****Maintenance Cycle:** 8 years**Quantity:** 1 Lump Sum**Estimate:** \$5,000**Next Maintenance:** Year 8 (2027)**Unit Cost:** \$5,000.00 / LS

Future Maintenance	
Year	Cost
8 (2027)	\$5,000
16 (2035)	\$5,000
24 (2043)	\$5,000

This component provides funds for periodic large landscaping projects, such as removing and replacing overgrown plants or large tree pruning. Regular landscaping maintenance is paid for with funds from the operating budget. The budget saves a lump sum amount to be drawn from as needed.

Stn.57 2.9.3 Wetland - Maintenance**Maintenance Cycle:** 15 years**Quantity:** 1 Lump Sum**Estimate:** \$10,000**Next Maintenance:** Year 15 (2034)**Unit Cost:** \$10,000.00 / LS

Future Maintenance	
Year	Cost
15 (2034)	\$10,000
30 (2049)	\$10,000

Wetlands are protected environments that require specialized maintenance. Qualified professionals are required to inspect and repair critical structural features such as embankments, outlets, pipes and risers. Other considerations include removing accumulated sediment, removal of trash and invasive plants. This component budgets funds for periodic inspections, permits and maintenance of the wetland area adjacent to Station 57.



**Reserve Study Projections at the Starting Recommended Funding of \$162,300
Using Constant Dollar Values**



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	1 2020	2 2021	3 2022	4 2023	5 2024
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$18,190				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$1,670				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$7,300
Stn.51 2.7.3	Gate Operator - Maintenance	3	3			\$1,650		
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$2,200
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3			\$5,450		
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$6,140				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3			\$21,880		
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3			\$5,060		
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6					
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1	\$21,190				
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$2,500				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3			\$8,800		
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3			\$11,000		
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$8,000
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3			\$15,000		
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$24,750
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,000				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,000				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$16,500				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3			\$15,150		
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$5,000		
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	1 2020	2 2021	3 2022	4 2023	5 2024
Stn.51	15.4.2 Fire Sprinkler System - Maintenance	15	6					
Stn.51	15.5.1 Water Heater - Contingency	20	11					
Stn.51	15.6.1 Heat Recovery Unit - Replace	25	16					
Stn.51	15.6.2 Indirect Makeup AHU - Replace	20	11					
Stn.51	15.6.3 Furnace - Replace	20	11					
Stn.51	15.6.4 VRF Heat Pump - Contingency	6	6					
Stn.51	15.6.5 HVAC System - Contingency	5	5					\$5,000
Stn.51	15.6.6 Infrared Heaters - Replace	20	11					
Stn.51	15.7.1 Exhaust Fans - Contingency	5	5					\$7,620
Stn.51	16.3.1 Electrical System - Contingency	10	10					
Stn.51	16.5.1 Emergency Generator - Replace	30	21					
Stn.51	16.5.2 Generator Fuel Tank - Replace	30	21					
Stn.51	16.6.1 Exterior Light Fixtures - Replace	10	1	\$10,000				
Stn.51	16.8.1 Fire Control Panel - Replace	20	11					
Stn.51	16.9.1 Audio/Visual Equipment - Upgrades	15	6					
Stn.51	17.1.1 Fireblast 451 - Maintenance	10	1	\$10,000				
Stn.51	18.1.1 Security / Surveillance System - Replace	10	1	\$16,000				
Stn.57	2.6.1 Asphalt Paving - Repair	6	1	\$4,040				
Stn.57	2.6.2 Asphalt Pavement- Seal Coat & Restripe	6	1	\$5,050				
Stn.57	2.7.4 Privacy Wood Fence - Replace	15	10					
Stn.57	2.7.5 Chain-link Fence - Repair	40	20					
Stn.57	2.9.2 Landscaping - Maintenance	8	8					
Stn.57	2.9.3 Wetland - Maintenance	15	15					
Stn.57	3.3.3 Exterior Concrete Paving - Repair	6	4				\$3,200	
Stn.57	6.1.2 Garbage Bin Enclosure - Contingency	20	20					
Stn.57	6.4.5 Brick Siding - Maintenance	20	10					
Stn.57	7.3.2 Gutters & Downspouts - Replace	20	13					
Stn.57	7.4.7 Metal Roof - Replace	40	13					
Stn.57	7.4.8 Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57	8.2.8 Common Doors & Hardware - Maintenance	10	5					\$3,320
Stn.57	8.2.6 Overhead Bay Door - Replace	20	10					
Stn.57	8.2.7 Bay Door Operator - Contingency	20	20					
Stn.57	8.3.3 Storefront System - Maintenance	10	10					
Stn.57	8.5.2 Aluminum Framed Windows - Replace	45	18					
Stn.57	9.8.5 Front Entry Steel Framed Structure - Paint	10	4				\$2,250	
Stn.57	10.4.2 Exterior Signage - Refurbish	15	12					
Stn.57	11.4.3 Kitchen Equipment - Contingency	5	8					
Stn.57	11.6.4 Laundry Equipment - Contingency	5	5					\$3,300
Stn.57	11.6.5 Station Extractor - Bunker Gear Washer	12	7					
Stn.57	11.8.2 Air Compressor - Replace	12	13					
Stn.57	12.3.1 Interior Concrete Floor - Refurbish	25	26					
Stn.57	12.3.2 Apparatus Bay - Refurbish	10	5					\$13,500
Stn.57	12.3.3 Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$7,000
Stn.57	12.3.4 Front Reception Desk & Office - Remodel	10	3			\$25,000		
Stn.57	12.3.5 Kitchen - Remodel	10	5					\$10,000
Stn.57	12.3.6 Day / Dining Room - Remodel	15	5					\$15,000
Stn.57	12.3.7 Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57	12.3.8 Exercise Room - Refurbish	15	16					
Stn.57	12.3.9 Locker & Restroom - Refurbish	15	7					
Stn.57	12.3.10 Laundry & Utility Room - Refurbish	10	10					
Stn.57	15.2.3 Plumbing System - Contingency	10	6					
Stn.57	15.3.3 Irrigation System - Contingency	5	5					\$2,500
Stn.57	15.4.3 Fire Detection System - Maintenance	15	7					
Stn.57	15.4.4 Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57	15.5.2 Water Heater - Replace	15	4				\$7,920	
Stn.57	15.6.7 HVAC Units - Replace	15	8					
Stn.57	15.6.8 Furnace - Replace	10	6					
Stn.57	15.6.9 Infrared Overhead Heaters - Replace	10	10					
Stn.57	15.7.2 Exhaust Fans - Contingency	5	5					\$4,360
Stn.57	16.3.2 Electrical System - Contingency	20	10					
Stn.57	16.5.3 Emergency Generator - Contingency	20	20					
Stn.57	16.6.2 Exterior Light Fixtures - Replace	15	2		\$2,750			
Stn.57	16.8.2 Fire Control Panel - Replace	20	10					
Stn.57	18.1.2 Security / Surveillance System - Upgrade	10	1	\$15,000				
TOTAL EXPENDED BY YEAR				\$138,280	\$5,750	\$117,570	\$31,630	\$151,720
CARRY OVER RESERVES				\$159,998	\$184,018	\$340,568	\$385,298	\$515,968
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$138,280	\$5,750	\$117,570	\$31,630	\$151,720
ACCUMULATED RESERVES				\$184,018	\$340,568	\$385,298	\$515,968	\$526,548
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$184,018	\$340,568	\$385,298	\$515,968	\$526,548
STUDY YEAR				1 (2020)	2 (2021)	3 (2022)	4 (2023)	5 (2024)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

	#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
Stn.51	2.4.1	Concrete - Paving Repairs	10	1					
Stn.51	2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51	2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51	2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51	2.7.3	Gate Operator - Maintenance	3	3	\$1,650			\$1,650	
Stn.51	2.8.1	Wood Benches - Maintenance	10	5					
Stn.51	2.9.1	Landscaping - Maintenance	8	8			\$15,000		
Stn.51	3.3.1	Concrete Walkways - Repair	6	3				\$5,450	
Stn.51	3.3.2	Cast Concrete Retaining Walls - Repair	15	6	\$15,870				
Stn.51	6.1.1	Garbage Bin Enclosure - Repair	15	6	\$2,500				
Stn.51	6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51	6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51	6.4.1	Brick Siding - Maintenance	20	11					
Stn.51	6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51	6.4.4	Metal Siding - Replace	35	26					
Stn.51	7.1.1	Sealant Joints - Replace	15	6	\$22,440				
Stn.51	7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51	7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51	7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51	7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51	7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51	8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4	Coiling Door - Maintenance	30	21					
Stn.51	8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1	Storefront System - Maintenance	15	6	\$7,670				
Stn.51	8.3.2	Storefront System - Replace	60	52					
Stn.51	8.5.1	Aluminum Windows - Replace	40	31					
Stn.51	9.8.1	Cedar Wood Siding - Maintenance	6	3				\$21,880	
Stn.51	9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51	9.8.3	Exterior Steel - Maintenance	6	6	\$8,000				
Stn.51	9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1				\$21,190	
Stn.51	10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51	10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51	11.1.1	Propane Forklift - Replace	20	10					\$22,000
Stn.51	11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$5,000		
Stn.51	11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51	11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51	11.8.1	Air Compressor System - Replace	15	6	\$8,800				
Stn.51	12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51	12.1.2	Admin Common Areas - Repaint	16	7		\$17,320			
Stn.51	12.1.3	Exercise Room - Refurbish	20	11					
Stn.51	12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51	12.1.5	Admin Offices - Refurbish	16	7		\$25,000			
Stn.51	12.1.6	Lobby - Refurbish	15	8			\$20,000		
Stn.51	12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51	12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1	Duty Crew Common Areas - Full Repaint	16	9				\$13,770	
Stn.51	12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51	12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51	12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51	12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51	12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6	\$6,000				
Stn.51	12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51	12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7		\$24,540			
Stn.51	12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4	2nd Floor Resilient Flooring - Replace	15	6	\$2,710				
Stn.51	12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6	2nd Floor Sheet Flooring - Replace	15	6	\$41,420				
Stn.51	12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51	12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1	Elevator - Major Upgrades	40	31					
Stn.51	14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1	Irrigation System - Contingency	10	10					\$10,300
Stn.51	15.3.2	Storm Water System - Contingency	3	3	\$5,000			\$5,000	
Stn.51	15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

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30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
Stn.51	15.4.2 Fire Sprinkler System - Maintenance	15	6	\$8,000				
Stn.51	15.5.1 Water Heater - Contingency	20	11					
Stn.51	15.6.1 Heat Recovery Unit - Replace	25	16					
Stn.51	15.6.2 Indirect Makeup AHU - Replace	20	11					
Stn.51	15.6.3 Furnace - Replace	20	11					
Stn.51	15.6.4 VRF Heat Pump - Contingency	6	6	\$19,330				
Stn.51	15.6.5 HVAC System - Contingency	5	5					\$5,000
Stn.51	15.6.6 Infrared Heaters - Replace	20	11					
Stn.51	15.7.1 Exhaust Fans - Contingency	5	5					\$7,620
Stn.51	16.3.1 Electrical System - Contingency	10	10					\$5,000
Stn.51	16.5.1 Emergency Generator - Replace	30	21					
Stn.51	16.5.2 Generator Fuel Tank - Replace	30	21					
Stn.51	16.6.1 Exterior Light Fixtures - Replace	10	1					
Stn.51	16.8.1 Fire Control Panel - Replace	20	11					
Stn.51	16.9.1 Audio/Visual Equipment - Upgrades	15	6	\$77,000				
Stn.51	17.1.1 Fireblast 451 - Maintenance	10	1					
Stn.51	18.1.1 Security / Surveillance System - Replace	10	1					
Stn.57	2.6.1 Asphalt Paving - Repair	6	1		\$4,040			
Stn.57	2.6.2 Asphalt Pavement- Seal Coat & Restripe	6	1		\$5,050			
Stn.57	2.7.4 Privacy Wood Fence - Replace	15	10					\$6,070
Stn.57	2.7.5 Chain-link Fence - Repair	40	20					
Stn.57	2.9.2 Landscaping - Maintenance	8	8			\$5,000		
Stn.57	2.9.3 Wetland - Maintenance	15	15					
Stn.57	3.3.3 Exterior Concrete Paving - Repair	6	4					\$3,200
Stn.57	6.1.2 Garbage Bin Enclosure - Contingency	20	20					
Stn.57	6.4.5 Brick Siding - Maintenance	20	10					\$12,830
Stn.57	7.3.2 Gutters & Downspouts - Replace	20	13					
Stn.57	7.4.7 Metal Roof - Replace	40	13					
Stn.57	7.4.8 Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57	8.2.8 Common Doors & Hardware - Maintenance	10	5					
Stn.57	8.2.6 Overhead Bay Door - Replace	20	10					\$5,700
Stn.57	8.2.7 Bay Door Operator - Contingency	20	20					
Stn.57	8.3.3 Storefront System - Maintenance	10	10					\$19,250
Stn.57	8.5.2 Aluminum Framed Windows - Replace	45	18					
Stn.57	9.8.5 Front Entry Steel Framed Structure - Paint	10	4					
Stn.57	10.4.2 Exterior Signage - Refurbish	15	12					
Stn.57	11.4.3 Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57	11.6.4 Laundry Equipment - Contingency	5	5					\$3,300
Stn.57	11.6.5 Station Extractor - Bunker Gear Washer	12	7		\$8,800			
Stn.57	11.8.2 Air Compressor - Replace	12	13					
Stn.57	12.3.1 Interior Concrete Floor - Refurbish	25	26					
Stn.57	12.3.2 Apparatus Bay - Refurbish	10	5					
Stn.57	12.3.3 Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57	12.3.4 Front Reception Desk & Office - Remodel	10	3					
Stn.57	12.3.5 Kitchen - Remodel	10	5					
Stn.57	12.3.6 Day / Dining Room - Remodel	15	5					
Stn.57	12.3.7 Duty Crew Sleep Rooms - Refurbish	20	10					\$5,000
Stn.57	12.3.8 Exercise Room - Refurbish	15	16					
Stn.57	12.3.9 Locker & Restroom - Refurbish	15	7		\$2,000			
Stn.57	12.3.10 Laundry & Utility Room - Refurbish	10	10					\$10,000
Stn.57	15.2.3 Plumbing System - Contingency	10	6	\$5,000				
Stn.57	15.3.3 Irrigation System - Contingency	5	5					\$2,500
Stn.57	15.4.3 Fire Detection System - Maintenance	15	7		\$5,000			
Stn.57	15.4.4 Wet & Dry Fire Sprinkler System - Contingency	10	10					\$5,500
Stn.57	15.5.2 Water Heater - Replace	15	4					
Stn.57	15.6.7 HVAC Units - Replace	15	8			\$11,000		
Stn.57	15.6.8 Furnace - Replace	10	6	\$13,750				
Stn.57	15.6.9 Infrared Overhead Heaters - Replace	10	10					\$5,000
Stn.57	15.7.2 Exhaust Fans - Contingency	5	5					\$4,360
Stn.57	16.3.2 Electrical System - Contingency	20	10					\$6,600
Stn.57	16.5.3 Emergency Generator - Contingency	20	20					
Stn.57	16.6.2 Exterior Light Fixtures - Replace	15	2					
Stn.57	16.8.2 Fire Control Panel - Replace	20	10					\$3,850
Stn.57	18.1.2 Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$245,140	\$94,750	\$73,330	\$87,200	\$180,950
CARRY OVER RESERVES				\$526,548	\$443,708	\$511,258	\$600,228	\$675,328
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$245,140	\$94,750	\$73,330	\$87,200	\$180,950
ACCUMULATED RESERVES				\$443,708	\$511,258	\$600,228	\$675,328	\$656,678
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$443,708	\$511,258	\$600,228	\$675,328	\$656,678
STUDY YEAR				6 (2025)	7 (2026)	8 (2027)	9 (2028)	10 (2029)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$18,190				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$1,670				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$7,300
Stn.51 2.7.3	Gate Operator - Maintenance	3	3		\$1,650			\$1,650
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$2,200
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3					\$5,450
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11	\$9,640				
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11	\$53,750				
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$6,140				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3					\$21,880
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					\$5,060
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6			\$8,000		
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$2,500				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					\$8,800
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					\$11,000
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11	\$3,000				
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$8,000
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					\$15,000
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11	\$19,250				
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$24,750
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,000				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,000				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$16,500				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					\$34,080
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11	\$2,310				
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11	\$32,180				
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					\$15,150
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$5,000		\$5,000
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11	\$16,280				
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11	\$9,900				
Stn.51 15.6.3	Furnace - Replace	20	11	\$2,200				
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6		\$19,330			
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11	\$15,180				
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$10,000				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11	\$3,740				
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$10,000				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$16,000				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1			\$4,040		
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1			\$5,050		
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					\$10,000
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13			\$3,160		
Stn.57 7.4.7	Metal Roof - Replace	40	13			\$60,060		
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$3,320
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$2,250	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12		\$2,500			
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13			\$40,040		
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$13,500
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$25,000		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$10,000
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$15,000				
TOTAL EXPENDED BY YEAR				\$275,430	\$39,480	\$154,680	\$20,510	\$262,790
CARRY OVER RESERVES				\$656,678	\$543,548	\$666,368	\$673,988	\$815,778
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$275,430	\$39,480	\$154,680	\$20,510	\$262,790
ACCUMULATED RESERVES				\$543,548	\$666,368	\$673,988	\$815,778	\$715,288
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$543,548	\$666,368	\$673,988	\$815,778	\$715,288
STUDY YEAR				11 (2030)	12 (2031)	13 (2032)	14 (2033)	15 (2034)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT. CYCLE	NEXT MAINT.	16 2035	17 2036	18 2037	19 2038	20 2039
#	COMPONENT NAME							
Stn.51	2.4.1 Concrete - Paving Repairs	10	1					
Stn.51	2.4.2 Concrete - Repaint Stalls & Curbs	10	1					
Stn.51	2.7.1 Prefinished Metal Fence - Replace	30	21					
Stn.51	2.7.2 Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51	2.7.3 Gate Operator - Maintenance	3	3			\$1,650		
Stn.51	2.8.1 Wood Benches - Maintenance	10	5					
Stn.51	2.9.1 Landscaping - Maintenance	8	8	\$15,000				
Stn.51	3.3.1 Concrete Walkways - Repair	6	3					
Stn.51	3.3.2 Cast Concrete Retaining Walls - Repair	15	6					
Stn.51	6.1.1 Garbage Bin Enclosure - Repair	15	6					
Stn.51	6.2.1 Pedestal Paver - Maintenance	30	21					
Stn.51	6.2.2 PVC Thermoplastic Membrane - Replace	30	21					
Stn.51	6.4.1 Brick Siding - Maintenance	20	11					
Stn.51	6.4.2 CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3 Fiber Cement Board Siding - Repair	10	1					
Stn.51	6.4.4 Metal Siding - Replace	35	26					
Stn.51	7.1.1 Sealant Joints - Replace	15	6					
Stn.51	7.3.1 Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51	7.4.1 Low Sloped Ribbed Roof - Replace	30	21					
Stn.51	7.4.2 Low Sloped Smooth Roof - Replace	30	21					
Stn.51	7.4.3 Tower Composition Shingles - Replace	30	21					
Stn.51	7.4.4 Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5 Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6 Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1 Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2 Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51	8.2.3 Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4 Coiling Door - Maintenance	30	21					
Stn.51	8.2.5 Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1 Storefront System - Maintenance	15	6					
Stn.51	8.3.2 Storefront System - Replace	60	52					
Stn.51	8.5.1 Aluminum Windows - Replace	40	31					
Stn.51	9.8.1 Cedar Wood Siding - Maintenance	6	3					
Stn.51	9.8.2 Concrete Siding - Maintenance	12	3					
Stn.51	9.8.3 Exterior Steel - Maintenance	6	6			\$8,000		
Stn.51	9.8.4 Fiber Cement Board Siding - Caulk & Paint	8	1		\$21,190			
Stn.51	10.4.1 Exterior Signage - Refurbish	10	1					
Stn.51	10.5.1 Exterior Mail Pedestal Unit - Replace	25	16	\$2,200				
Stn.51	11.1.1 Propane Forklift - Replace	20	10					
Stn.51	11.4.1 Admin Kitchen Equipment - Contingency	10	8			\$5,000		
Stn.51	11.4.2 Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1 Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2 Unimac Gear Extractor - Replace	12	3					
Stn.51	11.6.3 Ramair Gear Dryer - Replace	12	3					
Stn.51	11.8.1 Air Compressor System - Replace	15	6					
Stn.51	12.1.1 Apparatus Bay - Refurbish	25	16	\$68,890				
Stn.51	12.1.2 Admin Common Areas - Repaint	16	7					
Stn.51	12.1.3 Exercise Room - Refurbish	20	11					
Stn.51	12.1.4 Bunk Gear Storage - Refurbish	10	5					
Stn.51	12.1.5 Admin Offices - Refurbish	16	7					
Stn.51	12.1.6 Lobby - Refurbish	15	8					
Stn.51	12.1.7 Public Meeting Room - Refurbish	12	3					
Stn.51	12.1.8 Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1 Duty Crew Common Areas - Full Repaint	16	9					
Stn.51	12.2.2 Duty Crew Common Areas - Touchup Paint	16	17		\$13,770			
Stn.51	12.2.3 Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51	12.2.4 Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51	12.2.5 Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51	12.2.6 Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51	12.2.7 Duty Crew Restrooms - Refurbish	10	1					
Stn.51	12.4.1 1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2 2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51	12.4.3 1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4 2nd Floor Resilient Flooring - Replace	15	6					
Stn.51	12.4.5 1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6 2nd Floor Sheet Flooring - Replace	15	6					
Stn.51	12.4.7 1st Floor Stained Concrete - Refurbish	12	3					
Stn.51	12.6.1 Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1 Elevator - Major Upgrades	40	31					
Stn.51	14.1.2 Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1 Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2 Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1 Irrigation System - Contingency	10	10					\$10,300
Stn.51	15.3.2 Storm Water System - Contingency	3	3			\$5,000		
Stn.51	15.4.1 Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	16 2035	17 2036	18 2037	19 2038	20 2039
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16	\$13,200				
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6			\$19,330		
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$5,000
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1				\$4,040	
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1				\$5,050	
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					\$4,280
Stn.57 2.9.2	Landscaping - Maintenance	8	8	\$5,000				
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4	\$3,200				
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					\$1,500
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					\$55,000
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$19,250
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18			\$30,000		
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7				\$8,800	
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					\$15,000
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16	\$30,000				
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$10,000
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$5,000				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$5,500
Stn.57 15.5.2	Water Heater - Replace	15	4				\$7,920	
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6	\$13,750				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$5,000
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					\$8,800
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2		\$2,750			
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$156,240	\$40,710	\$86,310	\$44,070	\$200,280
CARRY OVER RESERVES				\$715,288	\$721,348	\$842,938	\$918,928	\$1,037,158
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$156,240	\$40,710	\$86,310	\$44,070	\$200,280
ACCUMULATED RESERVES				\$721,348	\$842,938	\$918,928	\$1,037,158	\$999,178
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$721,348	\$842,938	\$918,928	\$1,037,158	\$999,178
STUDY YEAR				16 (2035)	17 (2036)	18 (2037)	19 (2038)	20 (2039)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51	2.4.1 Concrete - Paving Repairs	10	1	\$18,190				
Stn.51	2.4.2 Concrete - Repaint Stalls & Curbs	10	1	\$1,670				
Stn.51	2.7.1 Prefinished Metal Fence - Replace	30	21	\$73,010				
Stn.51	2.7.2 Prefinished Metal Fence & Gates - Maintenance	10	5					\$7,300
Stn.51	2.7.3 Gate Operator - Maintenance	3	3	\$1,650			\$1,650	
Stn.51	2.8.1 Wood Benches - Maintenance	10	5					\$2,200
Stn.51	2.9.1 Landscaping - Maintenance	8	8				\$15,000	
Stn.51	3.3.1 Concrete Walkways - Repair	6	3	\$5,450				
Stn.51	3.3.2 Cast Concrete Retaining Walls - Repair	15	6	\$15,870				
Stn.51	6.1.1 Garbage Bin Enclosure - Repair	15	6	\$2,500				
Stn.51	6.2.1 Pedestal Paver - Maintenance	30	21	\$1,830				
Stn.51	6.2.2 PVC Thermoplastic Membrane - Replace	30	21	\$3,960				
Stn.51	6.4.1 Brick Siding - Maintenance	20	11					
Stn.51	6.4.2 CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3 Fiber Cement Board Siding - Repair	10	1	\$6,140				
Stn.51	6.4.4 Metal Siding - Replace	35	26					
Stn.51	7.1.1 Sealant Joints - Replace	15	6	\$22,440				
Stn.51	7.3.1 Scuppers, Gutters & Downspouts - Replace	30	21	\$3,570				
Stn.51	7.4.1 Low Sloped Ribbed Roof - Replace	30	21	\$189,430				
Stn.51	7.4.2 Low Sloped Smooth Roof - Replace	30	21	\$124,820				
Stn.51	7.4.3 Tower Composition Shingles - Replace	30	21	\$1,210				
Stn.51	7.4.4 Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5 Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6 Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1 Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2 Overhead Bay Doors & Hardware - Replace	30	21	\$24,200				
Stn.51	8.2.3 Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4 Coiling Door - Maintenance	30	21	\$9,900				
Stn.51	8.2.5 Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1 Storefront System - Maintenance	15	6	\$7,670				
Stn.51	8.3.2 Storefront System - Replace	60	52					
Stn.51	8.5.1 Aluminum Windows - Replace	40	31					
Stn.51	9.8.1 Cedar Wood Siding - Maintenance	6	3	\$21,880				
Stn.51	9.8.2 Concrete Siding - Maintenance	12	3					
Stn.51	9.8.3 Exterior Steel - Maintenance	6	6				\$8,000	
Stn.51	9.8.4 Fiber Cement Board Siding - Caulk & Paint	8	1					\$21,190
Stn.51	10.4.1 Exterior Signage - Refurbish	10	1	\$2,500				
Stn.51	10.5.1 Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51	11.1.1 Propane Forklift - Replace	20	10					
Stn.51	11.4.1 Admin Kitchen Equipment - Contingency	10	8					
Stn.51	11.4.2 Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1 Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2 Unimac Gear Extractor - Replace	12	3					
Stn.51	11.6.3 Ramair Gear Dryer - Replace	12	3					
Stn.51	11.8.1 Air Compressor System - Replace	15	6	\$8,800				
Stn.51	12.1.1 Apparatus Bay - Refurbish	25	16					
Stn.51	12.1.2 Admin Common Areas - Repaint	16	7			\$17,320		
Stn.51	12.1.3 Exercise Room - Refurbish	20	11					
Stn.51	12.1.4 Bunk Gear Storage - Refurbish	10	5					\$8,000
Stn.51	12.1.5 Admin Offices - Refurbish	16	7			\$25,000		
Stn.51	12.1.6 Lobby - Refurbish	15	8			\$20,000		
Stn.51	12.1.7 Public Meeting Room - Refurbish	12	3					
Stn.51	12.1.8 Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1 Duty Crew Common Areas - Full Repaint	16	9					\$13,770
Stn.51	12.2.2 Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51	12.2.3 Duty Crew Sleep Room Interiors - Refurbish	10	5					\$24,750
Stn.51	12.2.4 Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,000				
Stn.51	12.2.5 Duty Crew Laundry Interiors - Refurbish	10	1	\$2,000				
Stn.51	12.2.6 Duty Crew Office/Training Areas - Refurbish	15	6	\$6,000				
Stn.51	12.2.7 Duty Crew Restrooms - Refurbish	10	1	\$16,500				
Stn.51	12.4.1 1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2 2nd Floor Interior Carpet Flooring - Replace	16	7			\$24,540		
Stn.51	12.4.3 1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4 2nd Floor Resilient Flooring - Replace	15	6	\$2,710				
Stn.51	12.4.5 1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6 2nd Floor Sheet Flooring - Replace	15	6	\$41,420				
Stn.51	12.4.7 1st Floor Stained Concrete - Refurbish	12	3					
Stn.51	12.6.1 Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1 Elevator - Major Upgrades	40	31					
Stn.51	14.1.2 Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1 Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2 Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1 Irrigation System - Contingency	10	10					
Stn.51	15.3.2 Storm Water System - Contingency	3	3	\$5,000			\$5,000	
Stn.51	15.4.1 Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$8,000				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6				\$19,330	
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21	\$19,800				
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21	\$8,800				
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$10,000				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$77,000				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$10,000				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$16,000				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1					\$4,040
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1					\$5,050
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$6,070
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8				\$5,000	
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4		\$3,200			
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$3,320
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$2,250	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					\$40,040
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$13,500
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$25,000		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$10,000
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$2,000			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7			\$5,000		
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$11,000		
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$15,000				
TOTAL EXPENDED BY YEAR				\$794,920	\$13,200	\$140,190	\$74,490	\$219,880
CARRY OVER RESERVES				\$999,178	\$366,558	\$515,658	\$537,768	\$625,578
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$794,920	\$13,200	\$140,190	\$74,490	\$219,880
ACCUMULATED RESERVES				\$366,558	\$515,658	\$537,768	\$625,578	\$567,998
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$366,558	\$515,658	\$537,768	\$625,578	\$567,998
STUDY YEAR				21 (2040)	22 (2041)	23 (2042)	24 (2043)	25 (2044)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

	#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
Stn.51	2.4.1	Concrete - Paving Repairs	10	1					
Stn.51	2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51	2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51	2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51	2.7.3	Gate Operator - Maintenance	3	3		\$1,650			\$1,650
Stn.51	2.8.1	Wood Benches - Maintenance	10	5					
Stn.51	2.9.1	Landscaping - Maintenance	8	8					
Stn.51	3.3.1	Concrete Walkways - Repair	6	3		\$5,450			
Stn.51	3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51	6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51	6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51	6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51	6.4.1	Brick Siding - Maintenance	20	11					
Stn.51	6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51	6.4.4	Metal Siding - Replace	35	26	\$41,180				
Stn.51	7.1.1	Sealant Joints - Replace	15	6					
Stn.51	7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51	7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51	7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51	7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51	7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51	8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4	Coiling Door - Maintenance	30	21					
Stn.51	8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1	Storefront System - Maintenance	15	6					
Stn.51	8.3.2	Storefront System - Replace	60	52					
Stn.51	8.5.1	Aluminum Windows - Replace	40	31					
Stn.51	9.8.1	Cedar Wood Siding - Maintenance	6	3		\$21,880			
Stn.51	9.8.2	Concrete Siding - Maintenance	12	3		\$5,060			
Stn.51	9.8.3	Exterior Steel - Maintenance	6	6					\$8,000
Stn.51	9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51	10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51	10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51	11.1.1	Propane Forklift - Replace	20	10					\$22,000
Stn.51	11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$5,000		
Stn.51	11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2	Unimac Gear Extractor - Replace	12	3		\$8,800			
Stn.51	11.6.3	Ramair Gear Dryer - Replace	12	3		\$11,000			
Stn.51	11.8.1	Air Compressor System - Replace	15	6					
Stn.51	12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51	12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51	12.1.3	Exercise Room - Refurbish	20	11					
Stn.51	12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51	12.1.5	Admin Offices - Refurbish	16	7					
Stn.51	12.1.6	Lobby - Refurbish	15	8					
Stn.51	12.1.7	Public Meeting Room - Refurbish	12	3		\$15,000			
Stn.51	12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51	12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51	12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51	12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51	12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51	12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51	12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51	12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51	12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51	12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51	12.4.7	1st Floor Stained Concrete - Refurbish	12	3		\$15,150			
Stn.51	12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1	Elevator - Major Upgrades	40	31					
Stn.51	14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1	Irrigation System - Contingency	10	10					\$10,300
Stn.51	15.3.2	Storm Water System - Contingency	3	3		\$5,000			\$5,000
Stn.51	15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
Stn.51	15.4.2 Fire Sprinkler System - Maintenance	15	6					
Stn.51	15.5.1 Water Heater - Contingency	20	11					
Stn.51	15.6.1 Heat Recovery Unit - Replace	25	16					
Stn.51	15.6.2 Indirect Makeup AHU - Replace	20	11					
Stn.51	15.6.3 Furnace - Replace	20	11					
Stn.51	15.6.4 VRF Heat Pump - Contingency	6	6					\$19,330
Stn.51	15.6.5 HVAC System - Contingency	5	5					\$5,000
Stn.51	15.6.6 Infrared Heaters - Replace	20	11					
Stn.51	15.7.1 Exhaust Fans - Contingency	5	5					\$7,620
Stn.51	16.3.1 Electrical System - Contingency	10	10					\$5,000
Stn.51	16.5.1 Emergency Generator - Replace	30	21					
Stn.51	16.5.2 Generator Fuel Tank - Replace	30	21					
Stn.51	16.6.1 Exterior Light Fixtures - Replace	10	1					
Stn.51	16.8.1 Fire Control Panel - Replace	20	11					
Stn.51	16.9.1 Audio/Visual Equipment - Upgrades	15	6					
Stn.51	17.1.1 Fireblast 451 - Maintenance	10	1					
Stn.51	18.1.1 Security / Surveillance System - Replace	10	1					
Stn.57	2.6.1 Asphalt Paving - Repair	6	1					
Stn.57	2.6.2 Asphalt Pavement- Seal Coat & Restripe	6	1					
Stn.57	2.7.4 Privacy Wood Fence - Replace	15	10					
Stn.57	2.7.5 Chain-link Fence - Repair	40	20					
Stn.57	2.9.2 Landscaping - Maintenance	8	8					
Stn.57	2.9.3 Wetland - Maintenance	15	15					\$10,000
Stn.57	3.3.3 Exterior Concrete Paving - Repair	6	4			\$3,200		
Stn.57	6.1.2 Garbage Bin Enclosure - Contingency	20	20					
Stn.57	6.4.5 Brick Siding - Maintenance	20	10					\$12,830
Stn.57	7.3.2 Gutters & Downspouts - Replace	20	13					
Stn.57	7.4.7 Metal Roof - Replace	40	13					
Stn.57	7.4.8 Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57	8.2.8 Common Doors & Hardware - Maintenance	10	5					
Stn.57	8.2.6 Overhead Bay Door - Replace	20	10					\$5,700
Stn.57	8.2.7 Bay Door Operator - Contingency	20	20					
Stn.57	8.3.3 Storefront System - Maintenance	10	10					\$19,250
Stn.57	8.5.2 Aluminum Framed Windows - Replace	45	18					
Stn.57	9.8.5 Front Entry Steel Framed Structure - Paint	10	4					
Stn.57	10.4.2 Exterior Signage - Refurbish	15	12		\$2,500			
Stn.57	11.4.3 Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57	11.6.4 Laundry Equipment - Contingency	5	5					\$3,300
Stn.57	11.6.5 Station Extractor - Bunker Gear Washer	12	7					
Stn.57	11.8.2 Air Compressor - Replace	12	13					
Stn.57	12.3.1 Interior Concrete Floor - Refurbish	25	26	\$7,900				
Stn.57	12.3.2 Apparatus Bay - Refurbish	10	5					
Stn.57	12.3.3 Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$7,000
Stn.57	12.3.4 Front Reception Desk & Office - Remodel	10	3					
Stn.57	12.3.5 Kitchen - Remodel	10	5					
Stn.57	12.3.6 Day / Dining Room - Remodel	15	5					
Stn.57	12.3.7 Duty Crew Sleep Rooms - Refurbish	20	10					\$5,000
Stn.57	12.3.8 Exercise Room - Refurbish	15	16					
Stn.57	12.3.9 Locker & Restroom - Refurbish	15	7					
Stn.57	12.3.10 Laundry & Utility Room - Refurbish	10	10					\$10,000
Stn.57	15.2.3 Plumbing System - Contingency	10	6	\$5,000				
Stn.57	15.3.3 Irrigation System - Contingency	5	5					\$2,500
Stn.57	15.4.3 Fire Detection System - Maintenance	15	7					
Stn.57	15.4.4 Wet & Dry Fire Sprinkler System - Contingency	10	10					\$5,500
Stn.57	15.5.2 Water Heater - Replace	15	4					
Stn.57	15.6.7 HVAC Units - Replace	15	8					
Stn.57	15.6.8 Furnace - Replace	10	6	\$13,750				
Stn.57	15.6.9 Infrared Overhead Heaters - Replace	10	10					\$5,000
Stn.57	15.7.2 Exhaust Fans - Contingency	5	5					\$4,360
Stn.57	16.3.2 Electrical System - Contingency	20	10					\$6,600
Stn.57	16.5.3 Emergency Generator - Contingency	20	20					
Stn.57	16.6.2 Exterior Light Fixtures - Replace	15	2					
Stn.57	16.8.2 Fire Control Panel - Replace	20	10					\$3,850
Stn.57	18.1.2 Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$67,830	\$94,490	\$25,530	\$18,260	\$222,660
CARRY OVER RESERVES				\$567,998	\$662,468	\$730,278	\$867,048	\$1,011,088
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$67,830	\$94,490	\$25,530	\$18,260	\$222,660
ACCUMULATED RESERVES				\$662,468	\$730,278	\$867,048	\$1,011,088	\$950,728
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$662,468	\$730,278	\$867,048	\$1,011,088	\$950,728
STUDY YEAR				26 (2045)	27 (2046)	28 (2047)	29 (2048)	30 (2049)

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**Reserve Study Projections at the Starting Recommended Funding of \$162,300
Using Inflated Dollar Values**



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT.	NEXT	1	2	3	4	5
#	COMPONENT NAME	CYCLE	MAINT.	2020	2021	2022	2023	2024
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$18,736				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$1,720				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3			\$1,803		\$8,463
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$2,550
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3			\$5,955		
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$6,324				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$7,106
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$6,190	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$14,361	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$3,912		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3			\$23,909		
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3			\$5,529		
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6					
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1	\$21,826				
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$2,575				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$17,389
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$4,336
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3			\$9,616		
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3			\$12,020		
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$9,274
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3			\$16,391		
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$28,692
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,300				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,060				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$16,995				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3			\$16,555		
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$6,376
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$5,796
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$5,464		
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$2,898



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	1 2020	2 2021	3 2022	4 2023	5 2024
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6					
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,796
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$8,834
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$10,300				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$10,300				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$16,480				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1	\$4,161				
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1	\$5,202				
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4				\$3,602	
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,183			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$3,849
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$2,532	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8					
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,826
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$15,650
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$8,115
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$27,318		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$11,593
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					\$17,389
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,898
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4				\$8,914	
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$5,054
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2		\$2,917			
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$15,450				
TOTAL EXPENDED BY YEAR				\$142,428	\$6,100	\$128,472	\$35,600	\$175,885
CARRY OVER RESERVES				\$159,998	\$183,268	\$349,613	\$400,754	\$551,936
ANNUAL RESERVE CONTRIB				\$162,300	\$167,169	\$172,184	\$177,350	\$182,670
RESERVE EXPENDITURES				\$142,428	\$6,100	\$128,472	\$35,600	\$175,885
ACCUMULATED RESERVES				\$179,869	\$344,337	\$393,325	\$542,504	\$558,722
INTEREST EARNED				\$3,399	\$5,276	\$7,429	\$9,433	\$11,107
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$183,268	\$349,613	\$400,754	\$551,936	\$569,828
YEARS	0-1	2-10	11-30	1 (2020)	2 (2021)	3 (2022)	4 (2023)	5 (2024)
CONTRIBUTION INFLATION	0%	3%	4%	0%	3%	3%	3%	3%
COMPONENT COMPOUND INFLATION	3%	3%	4%	103%	106%	109%	113%	116%
INTEREST RATE MULTIPLIER	2%	2%	3%	2%	2%	2%	2%	2%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
#	COMPONENT NAME							
Stn.51 2.4.1	Concrete - Paving Repairs	10	1					
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3	\$1,970			\$2,153	
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					
Stn.51 2.9.1	Landscaping - Maintenance	8	8			\$19,002		
Stn.51 3.3.1	Concrete Walkways - Repair	6	3				\$7,111	
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6	\$18,950				
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6	\$2,985				
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6	\$26,795				
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$8,238
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$7,176	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$16,649	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$4,535		
Stn.51 8.3.1	Storefront System - Maintenance	15	6	\$9,158				
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3				\$28,548	
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6	\$9,552				
Stn.51 9.6.4	Fiber Cement Board Siding - Caulk & Paint	8	1				\$27,648	
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					\$29,566
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$6,334		
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$20,159
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$5,026
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51 11.8.1	Air Compressor System - Replace	15	6	\$10,508				
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7		\$21,301			
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51 12.1.5	Admin Offices - Refurbish	16	7		\$30,747			
Stn.51 12.1.6	Lobby - Refurbish	15	8			\$25,335		
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9				\$17,967	
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6	\$7,164				
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7		\$30,181			
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6	\$3,236				
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6	\$49,458				
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$7,392
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$6,720
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					\$13,842
Stn.51 15.3.2	Storm Water System - Contingency	3	3	\$5,970			\$6,524	
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$3,360



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$9,552				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6	\$23,081				
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$6,720
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$10,241
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$6,720
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$91,942				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1		\$4,969			
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1		\$6,211			
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$8,158
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8			\$6,334		
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					\$4,301
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					\$17,242
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,690			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					\$7,660
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$25,870
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$17,418		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$4,435
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7		\$10,823			
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					\$6,720
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$2,460			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$13,439
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$5,970				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$3,360
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7		\$6,149			
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$7,392
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$13,934		
Stn.57 15.6.8	Furnace - Replace	10	6	\$16,418				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$6,720
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$5,859
Stn.57 16.3.2	Electrical System - Contingency	20	10					\$8,870
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					\$5,174
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$292,710	\$116,531	\$92,892	\$113,776	\$243,182
CARRY OVER RESERVES				\$569,828	\$475,619	\$563,168	\$682,215	\$788,598
ANNUAL RESERVE CONTRIB				\$188,150	\$193,795	\$199,609	\$205,597	\$211,765
RESERVE EXPENDITURES				\$292,710	\$116,531	\$92,892	\$113,776	\$243,182
ACCUMULATED RESERVES				\$465,268	\$552,883	\$669,885	\$774,036	\$757,181
INTEREST EARNED				\$10,351	\$10,285	\$12,331	\$14,563	\$15,458
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$475,619	\$563,168	\$682,215	\$788,598	\$772,639
YEARS	0-1	2-10	11-30	6 (2025)	7 (2026)	8 (2027)	9 (2028)	10 (2029)
CONTRIBUTION INFLATION	0%	3%	4%	3%	3%	3%	3%	3%
COMPONENT COMPOUND INFLATION	3%	3%	4%	119%	123%	127%	130%	134%
INTEREST RATE MULTIPLIER	2%	2%	3%	2%	2%	2%	2%	2%

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Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT.	NEXT	11	12	13	14	15
#	COMPONENT NAME	CYCLE	MAINT.	2030	2031	2032	2033	2034
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$25,424				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$2,334				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$11,936
Stn.51 2.7.3	Gate Operator - Maintenance	3	3		\$2,398			\$2,698
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$3,597
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3					\$8,911
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11	\$13,474				
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11	\$75,125				
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$8,582				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$10,023
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$8,647	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$20,061	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$5,412		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3					\$35,776
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					\$8,274
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6			\$11,629		
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$3,494				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$24,526
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$6,115
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					\$14,389
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					\$17,986
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11	\$4,193				
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$13,081
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					\$24,526
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9	\$26,905				
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$40,468
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$13,977				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,795				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$23,062				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					\$55,724
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11	\$3,229				
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11	\$44,977				
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					\$24,771
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$8,993
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$8,175
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$7,268		\$8,175
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$4,088



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11	\$22,754				
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11	\$13,837				
Stn.51 15.6.3	Furnace - Replace	20	11	\$3,075				
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6		\$28,098			
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$8,175
Stn.51 15.6.6	Infrared Heaters - Replace	20	11	\$21,217				
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$12,459
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$13,977				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11	\$5,227				
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$13,977				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$22,363				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1			\$6,107		
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1			\$7,634		
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					\$16,351
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13			\$4,777		
Stn.57 7.4.7	Metal Roof - Replace	40	13			\$90,794		
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$4,361			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$5,428
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$3,537	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12		\$3,634			
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$20,786		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$5,396
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13			\$60,529		
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$22,074
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$37,793		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$16,351
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$4,088
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$7,129
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$20,965				
TOTAL EXPENDED BY YEAR				\$384,961	\$57,387	\$233,833	\$32,246	\$429,683
CARRY OVER RESERVES				\$772,639	\$628,622	\$821,712	\$850,803	\$1,095,048
ANNUAL RESERVE CONTRIB				\$220,235	\$229,045	\$238,206	\$247,735	\$257,644
RESERVE EXPENDITURES				\$384,961	\$57,387	\$233,833	\$32,246	\$429,683
ACCUMULATED RESERVES				\$607,913	\$800,279	\$826,086	\$1,066,292	\$923,010
INTEREST EARNED				\$20,708	\$21,434	\$24,717	\$28,756	\$30,271
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$628,622	\$821,712	\$850,803	\$1,095,048	\$953,280
YEARS	0-1	2-10	11-30	11 (2030)	12 (2031)	13 (2032)	14 (2033)	15 (2034)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	140%	145%	151%	157%	164%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT.	NEXT	16	17	18	19	20
#	COMPONENT NAME	CYCLE	MAINT.	2035	2036	2037	2038	2039
Stn.51 2.4.1	Concrete - Paving Repairs	10	1					
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3			\$3,035		
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					
Stn.51 2.9.1	Landscaping - Maintenance	8	8	\$25,507				
Stn.51 3.3.1	Concrete Walkways - Repair	6	3					
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$12,195
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$10,520	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$24,407	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$6,584		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3					
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6			\$14,714		
Stn.51 9.6.4	Fiber Cement Board Siding - Caulk & Paint	8	1		\$37,475			
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16	\$3,741				
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$9,196		
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$29,840
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$7,440
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16	\$117,146				
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17		\$24,352			
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$10,941
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$9,947
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					\$20,490
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$9,196		
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$4,973



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	16 2035	17 2036	18 2037	19 2038	20 2039
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16	\$22,446				
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6			\$35,553		
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$9,947
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$15,159
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$9,947
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1				\$7,728	
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1				\$9,660	
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					\$8,514
Stn.57 2.9.2	Landscaping - Maintenance	8	8	\$8,502				
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4	\$5,442				
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					\$2,984
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$5,306			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					\$109,413
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$38,294
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18			\$55,177		
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$25,290		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$6,565
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7				\$16,833	
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					\$29,840
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16	\$51,014				
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$19,893
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$8,502				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$4,973
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$10,941
Stn.57 15.5.2	Water Heater - Replace	15	4				\$15,149	
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6	\$23,382				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$9,947
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$8,673
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					\$17,506
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2		\$4,863			
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$265,683	\$71,996	\$158,745	\$84,298	\$398,422
CARRY OVER RESERVES				\$953,280	\$984,179	\$1,223,477	\$1,393,217	\$1,655,380
ANNUAL RESERVE CONTRIB				\$267,950	\$278,668	\$289,815	\$301,407	\$313,463
RESERVE EXPENDITURES				\$265,683	\$71,996	\$158,745	\$84,298	\$398,422
ACCUMULATED RESERVES				\$955,547	\$1,190,851	\$1,354,546	\$1,610,326	\$1,570,421
INTEREST EARNED				\$28,632	\$32,625	\$38,670	\$45,053	\$48,387
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$984,179	\$1,223,477	\$1,393,217	\$1,655,380	\$1,618,808
YEARS	0-1	2-10	11-30	16 (2035)	17 (2036)	18 (2037)	19 (2038)	20 (2039)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	170%	177%	184%	191%	199%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$37,633				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$3,455				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21	\$151,050				
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$17,668
Stn.51 2.7.3	Gate Operator - Maintenance	3	3	\$3,414			\$3,840	
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$5,325
Stn.51 2.9.1	Landscaping - Maintenance	8	8				\$34,908	
Stn.51 3.3.1	Concrete Walkways - Repair	6	3	\$11,275				
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6	\$32,833				
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6	\$5,172				
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21	\$3,786				
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21	\$8,193				
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$12,703				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6	\$46,426				
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21	\$7,386				
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21	\$391,911				
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21	\$258,240				
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21	\$2,503				
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$14,837
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$12,800	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21	\$50,067				
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$29,695	
Stn.51 8.2.4	Colling Door - Maintenance	30	21	\$20,482				
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$8,011		
Stn.51 8.3.1	Storefront System - Maintenance	15	6	\$15,868				
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3	\$45,267				
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6				\$18,618	
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					\$51,287
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$5,172				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$36,305
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$9,052
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51 11.8.1	Air Compressor System - Replace	15	6	\$18,206				
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7			\$38,757		
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$19,363
Stn.51 12.1.5	Admin Offices - Refurbish	16	7			\$55,943		
Stn.51 12.1.6	Lobby - Refurbish	15	8			\$44,754		
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					\$33,328
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$59,903
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$20,689				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$4,138				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6	\$12,413				
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$34,137				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7			\$54,914		
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6	\$5,607				
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6	\$85,694				
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$13,312
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$12,102
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3	\$10,344			\$11,636	
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$6,051



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$16,551				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6				\$44,985	
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$12,102
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$18,443
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21	\$40,964				
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21	\$18,206				
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$20,689				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$159,305				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$20,689				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$33,102				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1					\$9,778
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1					\$12,223
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$14,691
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8				\$11,636	
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4		\$6,885			
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$6,455			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$8,035
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$5,236	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$30,769		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$7,987
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					\$96,910
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$32,674
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$55,943		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$24,203
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$4,303			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					\$6,051
Stn.57 15.3.3	Irrigation System - Contingency	5	5					
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7		\$10,758			
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$24,615		
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$10,553
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$31,033				
TOTAL EXPENDED BY YEAR				\$1,644,608	\$28,402	\$313,706	\$173,355	\$532,179
CARRY OVER RESERVES				\$1,618,808	\$328,987	\$654,157	\$713,263	\$930,914
ANNUAL RESERVE CONTRIB				\$326,002	\$339,042	\$352,604	\$366,708	\$381,376
RESERVE EXPENDITURES				\$1,644,608	\$28,402	\$313,706	\$173,355	\$532,179
ACCUMULATED RESERVES				\$300,202	\$639,627	\$693,055	\$906,615	\$780,110
INTEREST EARNED				\$28,785	\$14,529	\$20,208	\$24,298	\$25,665
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$328,987	\$654,157	\$713,263	\$930,914	\$805,776
YEARS	0-1	2-10	11-30	21 (2040)	22 (2041)	23 (2042)	24 (2043)	25 (2044)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	207%	215%	224%	233%	242%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
#	COMPONENT NAME							
Stn.51 2.4.1	Concrete - Paving Repairs	10	1					
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3		\$4,319			\$4,859
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3		\$14,267			
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51 6.4.4	Metal Siding - Replace	35	26	\$103,655				
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$18,051
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$15,573	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$36,129	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$9,747		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3		\$57,278			
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3		\$13,246			
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6					\$23,557
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					\$64,783
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$13,613		
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$44,170
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$11,013
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3		\$23,037			
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3		\$28,796			
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3		\$39,267			
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3		\$39,660			
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$16,196
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$14,723
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					\$30,330
Stn.51 15.3.2	Storm Water System - Contingency	3	3		\$13,089			\$14,723
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$7,362



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6					\$56,921
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$14,723
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$22,439
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$14,723
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1					
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1					
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					\$29,447
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4			\$8,712		
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					\$37,780
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$7,853			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					\$16,785
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$56,685
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12		\$6,545			
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$37,435		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$9,717
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26	\$19,885				
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$20,613
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					\$14,723
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$29,447
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$12,586				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$7,362
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$16,196
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6	\$34,611				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$14,723
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$12,839
Stn.57 16.3.2	Electrical System - Contingency	20	10					\$19,435
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					\$11,337
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$170,737	\$247,357	\$69,506	\$51,702	\$655,664
CARRY OVER RESERVES				\$805,776	\$1,059,232	\$1,258,625	\$1,661,266	\$2,111,476
ANNUAL RESERVE CONTRIB				\$396,631	\$412,497	\$428,996	\$446,156	\$464,003
RESERVE EXPENDITURES				\$170,737	\$247,357	\$69,506	\$51,702	\$655,664
ACCUMULATED RESERVES				\$1,031,670	\$1,224,371	\$1,618,115	\$2,055,721	\$1,919,814
INTEREST EARNED				\$27,562	\$34,254	\$43,151	\$55,755	\$60,469
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$1,059,232	\$1,258,625	\$1,661,266	\$2,111,476	\$1,980,284
YEARS	0-1	2-10	11-30	26 (2045)	27 (2046)	28 (2047)	29 (2048)	30 (2049)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	252%	262%	272%	283%	294%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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FULLY FUNDED BALANCE CALCULATION TABLE



Fully Funded Balance Calculations

Northshore Fire Department

$FFB = \text{the sum of } \frac{\text{replacement cost} * \text{effective age}}{\text{useful life}} \text{ for all reserve components}$

Component Description					Quantity	Unit	Maintenance Cycle (Useful Life)	Remaining Useful Life	Effective Age	Current Replacement Cost	Fully Funded Balance
3%	Stn.51	2.4.1	Concrete - Paving Repairs		65610	SF	10	1	9	\$18,190	\$16,371
100%	Stn.51	2.4.2	Concrete - Repaint Stalls & Curbs		76	EA	10	1	9	\$1,670	\$1,503
100%	Stn.51	2.7.1	Prefinished Metal Fence - Replace		885	LF	30	21	9	\$73,010	\$21,903
10%	Stn.51	2.7.2	Prefinished Metal Fence & Gates - Maintenance		885	LF	10	5	5	\$7,300	\$3,650
100%	Stn.51	2.7.3	Gate Operator - Maintenance		1	EA	3	3	-	\$1,650	\$0
100%	Stn.51	2.8.1	Wood Benches - Maintenance		4	EA	10	5	5	\$2,200	\$1,100
100%	Stn.51	2.9.1	Landscaping - Maintenance		1	LS	8	8	-	\$15,000	\$0
10%	Stn.51	3.3.1	Concrete Walkways - Repair		5700	SF	6	3	3	\$5,450	\$2,725
5%	Stn.51	3.3.2	Cast Concrete Retaining Walls - Repair		740	LF	15	6	9	\$15,870	\$9,522
100%	Stn.51	6.1.1	Garbage Bin Enclosure - Repair		1	EA	15	6	9	\$2,500	\$1,500
25%	Stn.51	6.2.1	Pedestal Paver - Maintenance		180	SF	30	21	9	\$1,830	\$549
100%	Stn.51	6.2.2	PVC Thermoplastic Membrane - Replace		180	SF	30	21	9	\$3,960	\$1,188
5%	Stn.51	6.4.1	Brick Siding - Maintenance		7010	SF	20	11	9	\$9,640	\$4,338
100%	Stn.51	6.4.2	CMU Wall - Tuck Point		6515	SF	20	11	9	\$53,750	\$24,188
3%	Stn.51	6.4.3	Fiber Cement Board Siding - Repair		6420	SF	10	1	9	\$6,140	\$5,526
100%	Stn.51	6.4.4	Metal Siding - Replace		2340	SF	35	26	9	\$41,180	\$10,589
100%	Stn.51	7.1.1	Sealant Joints - Replace		1700	LF	15	6	9	\$22,440	\$13,464
100%	Stn.51	7.3.1	Scuppers, Gutters & Downspouts - Replace		560	LF	30	21	9	\$3,570	\$1,071
100%	Stn.51	7.4.1	Low Sloped Ribbed Roof - Replace		101	SQ	30	21	9	\$189,430	\$56,829
100%	Stn.51	7.4.2	Low Sloped Smooth Roof - Replace		95	SQ	30	21	9	\$124,820	\$37,446
100%	Stn.51	7.4.3	Tower Composition Shingles - Replace		2	SQ	30	21	9	\$1,210	\$363
100%	Stn.51	7.4.4	Tower Metal Roof - Replace		6	SQ	50	41	9	\$5,150	\$927
100%	Stn.51	7.4.5	Apparatus Bay Metal Roof - Replace		19	SQ	40	31	9	\$16,300	\$3,668
5%	Stn.51	7.4.6	Roof Inspection & Minor Repair		223	SQ	5	5	-	\$6,130	\$0
10%	Stn.51	8.2.1	Folding Bay Doors & Hardware - Maintenance		5	EA	5	4	1	\$5,500	\$1,100
100%	Stn.51	8.2.2	Overhead Bay Doors & Hardware - Replace		4	EA	30	21	9	\$24,200	\$7,260
100%	Stn.51	8.2.3	Overhead Bay Door Operator - Contingency		4	EA	5	4	1	\$12,760	\$2,552
100%	Stn.51	8.2.4	Coiling Door - Maintenance		2	EA	30	21	9	\$9,900	\$2,970
100%	Stn.51	8.2.5	Doors & Hardware - Maintenance		5	EA	5	3	2	\$3,580	\$1,432
20%	Stn.51	8.3.1	Storefront System - Maintenance		420	SF	15	6	9	\$7,670	\$4,602
100%	Stn.51	8.3.2	Storefront System - Replace		420	SF	60	52	8	\$38,350	\$5,113
100%	Stn.51	8.5.1	Aluminum Windows - Replace		2620	SF	40	31	9	\$172,920	\$38,907
100%	Stn.51	9.8.1	Cedar Wood Siding - Maintenance		1530	SF	6	3	3	\$21,880	\$10,940
100%	Stn.51	9.8.2	Concrete Siding - Maintenance		920	SF	12	3	9	\$5,060	\$3,795
100%	Stn.51	9.8.3	Exterior Steel - Maintenance		1	LS	6	6	-	\$8,000	\$0
100%	Stn.51	9.8.4	Fiber Cement Board Siding - Caulk & Paint		6420	SF	8	1	7	\$21,190	\$18,541
100%	Stn.51	10.4.1	Exterior Signage - Refurbish		1	LS	10	1	9	\$2,500	\$2,250
100%	Stn.51	10.5.1	Exterior Mail Pedestal Unit - Replace		1	EA	25	16	9	\$2,200	\$792
100%	Stn.51	11.1.1	Propane Forklift - Replace		1	EA	20	10	10	\$22,000	\$11,000
100%	Stn.51	11.4.1	Admin Kitchen Equipment - Contingency		1	LS	10	8	2	\$5,000	\$1,000
100%	Stn.51	11.4.2	Duty Crew Kitchen Equipment - Contingency		1	LS	5	5	-	\$15,000	\$0
100%	Stn.51	11.6.1	Laundry Equipment - Contingency		4	EA	5	5	-	\$3,740	\$0
100%	Stn.51	11.6.2	Unimac Gear Extractor - Replace		1	EA	12	3	9	\$8,800	\$6,600
100%	Stn.51	11.6.3	Ramair Gear Dryer - Replace		1	EA	12	3	9	\$11,000	\$8,250
100%	Stn.51	11.8.1	Air Compressor System - Replace		1	EA	15	6	9	\$8,800	\$5,280
100%	Stn.51	12.1.1	Apparatus Bay - Refurbish		12525	SF	25	16	9	\$68,890	\$24,800
100%	Stn.51	12.1.2	Admin Common Areas - Repaint		12115	SF	16	7	9	\$17,320	\$9,743
100%	Stn.51	12.1.3	Exercise Room - Refurbish		1	LS	20	11	9	\$3,000	\$1,350
100%	Stn.51	12.1.4	Bunk Gear Storage - Refurbish		1	LS	10	5	5	\$8,000	\$4,000
100%	Stn.51	12.1.5	Admin Offices - Refurbish		1	LS	16	7	9	\$25,000	\$14,063
100%	Stn.51	12.1.6	Lobby - Refurbish		1	LS	15	8	7	\$20,000	\$9,333
100%	Stn.51	12.1.7	Public Meeting Room - Refurbish		1	LS	12	3	9	\$15,000	\$11,250
100%	Stn.51	12.1.8	Public & Admin Restrooms - Refurbish		7	EA	20	11	9	\$19,250	\$8,663
100%	Stn.51	12.2.1	Duty Crew Common Areas - Full Repaint		9630	SF	16	9	7	\$13,770	\$6,024
100%	Stn.51	12.2.2	Duty Crew Common Areas - Touchup Paint		9630	SF	16	17	-	\$13,770	\$0



Fully Funded Balance Calculations

Northshore Fire Department

Continued

Component Description					Quantity	Unit	Maintenance Cycle (Useful Life)	Remaining Useful Life	Effective Age	Current Replacement Cost	Fully Funded Balance
100%	Stn.51	12.2.3	Duty Crew Sleep Room Interiors - Refurbish		9	EA	10	5	5	\$24,750	\$12,375
100%	Stn.51	12.2.4	Duty Crew Kitchen Interiors - Refurbish		1	LS	10	1	9	\$10,000	\$9,000
100%	Stn.51	12.2.5	Duty Crew Laundry Interiors - Refurbish		1	LS	10	1	9	\$2,000	\$1,800
100%	Stn.51	12.2.6	Duty Crew Office/Training Areas - Refurbish		1	LS	15	6	9	\$6,000	\$3,600
100%	Stn.51	12.2.7	Duty Crew Restrooms - Refurbish		6	EA	10	1	9	\$16,500	\$14,850
100%	Stn.51	12.4.1	1st Floor Interior Carpet Flooring - Replace		704	SY	24	15	9	\$34,080	\$12,780
100%	Stn.51	12.4.2	2nd Floor Interior Carpet Flooring - Replace		507	SY	16	7	9	\$24,540	\$13,804
100%	Stn.51	12.4.3	1st Floor Resilient Flooring - Replace		655	SF	20	11	9	\$2,310	\$1,040
100%	Stn.51	12.4.4	2nd Floor Resilient Flooring - Replace		770	SF	15	6	9	\$2,710	\$1,626
100%	Stn.51	12.4.5	1st Floor Sheet Flooring - Replace		1950	SF	20	11	9	\$32,180	\$14,481
100%	Stn.51	12.4.6	2nd Floor Sheet Flooring - Replace		2510	SF	15	6	9	\$41,420	\$24,852
100%	Stn.51	12.4.7	1st Floor Stained Concrete - Refurbish		510	SF	12	3	9	\$15,150	\$11,363
100%	Stn.51	12.6.1	Elevator Cab Interior - Remodel		1	LS	40	31	9	\$6,000	\$1,350
100%	Stn.51	14.1.1	Elevator - Major Upgrades		1	EA	40	31	9	\$125,000	\$28,125
100%	Stn.51	14.1.2	Elevators - 5 Year Load Test		1	LS	5	5	-	\$5,500	\$0
100%	Stn.51	15.2.1	Plumbing System - Contingency		1	LS	5	5	-	\$5,000	\$0
100%	Stn.51	15.2.2	Plumbing Supply Lines - Replace		1	LS	60	51	9	\$60,000	\$9,000
100%	Stn.51	15.3.1	Irrigation System - Contingency		12	ZN	10	10	-	\$10,300	\$0
100%	Stn.51	15.3.2	Storm Water System - Contingency		1	LS	3	3	-	\$5,000	\$0
100%	Stn.51	15.4.1	Fire Detection System - Maintenance		1	LS	5	5	-	\$2,500	\$0
100%	Stn.51	15.4.2	Fire Sprinkler System - Maintenance		1	LS	15	6	9	\$8,000	\$4,800
100%	Stn.51	15.5.1	Water Heater - Contingency		2	EA	20	11	9	\$16,280	\$7,326
100%	Stn.51	15.6.1	Heat Recovery Unit - Replace		1	EA	25	16	9	\$13,200	\$4,752
100%	Stn.51	15.6.2	Indirect Makeup AHU - Replace		1	EA	20	11	9	\$9,900	\$4,455
100%	Stn.51	15.6.3	Furnace - Replace		1	EA	20	11	9	\$2,200	\$990
33%	Stn.51	15.6.4	VRF Heat Pump - Contingency		40	EA	6	6	-	\$19,330	\$0
100%	Stn.51	15.6.5	HVAC System - Contingency		1	LS	5	5	-	\$5,000	\$0
100%	Stn.51	15.6.6	Infrared Heaters - Replace		6	EA	20	11	9	\$15,180	\$6,831
33%	Stn.51	15.7.1	Exhaust Fans - Contingency		14	EA	5	5	-	\$7,620	\$0
100%	Stn.51	16.3.1	Electrical System - Contingency		1	LS	10	10	-	\$5,000	\$0
100%	Stn.51	16.5.1	Emergency Generator - Replace		1	EA	30	21	9	\$19,800	\$5,940
100%	Stn.51	16.5.2	Generator Fuel Tank - Replace		1	EA	30	21	9	\$8,800	\$2,640
100%	Stn.51	16.6.1	Exterior Light Fixtures - Replace		1	LS	10	1	9	\$10,000	\$9,000
100%	Stn.51	16.8.1	Fire Control Panel - Replace		1	EA	20	11	9	\$3,740	\$1,683
100%	Stn.51	16.9.1	Audio/Visual Equipment - Upgrades		1	LS	15	6	9	\$77,000	\$46,200
100%	Stn.51	17.1.1	Fireblast 451 - Maintenance		1	EA	10	1	9	\$10,000	\$9,000
100%	Stn.51	18.1.1	Security / Surveillance System - Replace		1	LS	10	1	9	\$16,000	\$14,400
5%	Stn.57	2.6.1	Asphalt Paving - Repair		9180	SF	6	1	5	\$4,040	\$3,367
100%	Stn.57	2.6.2	Asphalt Pavement- Seal Coat & Restripe		9180	SF	6	1	5	\$5,050	\$4,208
100%	Stn.57	2.7.4	Privacy Wood Fence - Replace		120	LF	15	10	5	\$6,070	\$2,023
100%	Stn.57	2.7.5	Chain-link Fence - Repair		205	LF	40	20	20	\$4,280	\$2,140
100%	Stn.57	2.9.2	Landscaping - Maintenance		1	LS	8	8	-	\$5,000	\$0
100%	Stn.57	2.9.3	Wetland - Maintenance		1	LS	15	15	-	\$10,000	\$0
20%	Stn.57	3.3.3	Exterior Concrete Paving - Repair		1730	SF	6	4	2	\$3,200	\$1,067
100%	Stn.57	6.1.2	Garbage Bin Enclosure - Contingency		1	LS	20	20	-	\$1,500	\$0
10%	Stn.57	6.4.5	Brick Siding - Maintenance		4860	SF	20	10	10	\$12,830	\$6,415
100%	Stn.57	7.3.2	Gutters & Downspouts - Replace		511	LF	20	13	7	\$3,160	\$1,106
100%	Stn.57	7.4.7	Metal Roof - Replace		70	SQ	40	13	27	\$60,060	\$40,541
5%	Stn.57	7.4.8	Roof Inspection & Minor Repair		70	SQ	5	2	3	\$3,000	\$1,800
15%	Stn.57	8.2.8	Common Doors & Hardware - Maintenance		31	EA	10	5	5	\$3,320	\$1,660
100%	Stn.57	8.2.6	Overhead Bay Door - Replace		5	EA	20	10	10	\$5,700	\$2,850
100%	Stn.57	8.2.7	Bay Door Operator - Contingency		5	EA	20	20	-	\$55,000	\$0
100%	Stn.57	8.3.3	Storefront System - Maintenance		5	EA	10	10	-	\$19,250	\$0
100%	Stn.57	8.5.2	Aluminum Framed Windows - Replace		1	LS	45	18	27	\$30,000	\$18,000
100%	Stn.57	9.8.5	Front Entry Steel Framed Structure - Paint		128	LF	10	4	6	\$2,250	\$1,350



Fully Funded Balance Calculations

Northshore Fire Department

Continued

Component Description				Quantity	Unit	Maintenance Cycle (Useful Life)	Remaining Useful Life	Effective Age	Current Replacement Cost	Fully Funded Balance
100%	Stn.57	10.4.2	Exterior Signage - Refurbish	1	LS	15	12	3	\$2,500	\$500
50%	Stn.57	11.4.3	Kitchen Equipment - Contingency	5	EA	5	8	-	\$13,750	\$0
100%	Stn.57	11.6.4	Laundry Equipment - Contingency	2	EA	5	5	-	\$3,300	\$0
100%	Stn.57	11.6.5	Station Extractor - Bunker Gear Washer	1	EA	12	7	5	\$8,800	\$3,667
100%	Stn.57	11.8.2	Air Compressor - Replace	3640	SF	12	13	-	\$40,040	\$0
25%	Stn.57	12.3.1	Interior Concrete Floor - Refurbish	5748	SF	25	26	-	\$7,900	\$0
100%	Stn.57	12.3.2	Apparatus Bay - Refurbish	5844	SF	10	5	5	\$13,500	\$6,750
100%	Stn.57	12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	1	LS	25	5	20	\$7,000	\$5,600
100%	Stn.57	12.3.4	Front Reception Desk & Office - Remodel	1	LS	10	3	7	\$25,000	\$17,500
100%	Stn.57	12.3.5	Kitchen - Remodel	1	LS	10	5	5	\$10,000	\$5,000
100%	Stn.57	12.3.6	Day / Dining Room - Remodel	1	LS	15	5	10	\$15,000	\$10,000
100%	Stn.57	12.3.7	Duty Crew Sleep Rooms - Refurbish	1	LS	20	10	10	\$5,000	\$2,500
100%	Stn.57	12.3.8	Exercise Room - Refurbish	1	LS	15	16	-	\$30,000	\$0
100%	Stn.57	12.3.9	Locker & Restroom - Refurbish	1	LS	15	7	8	\$2,000	\$1,067
100%	Stn.57	12.3.10	Laundry & Utility Room - Refurbish	1	LS	10	10	-	\$10,000	\$0
100%	Stn.57	15.2.3	Plumbing System - Contingency	1	LS	10	6	4	\$5,000	\$2,000
100%	Stn.57	15.3.3	Irrigation System - Contingency	1	LS	5	5	-	\$2,500	\$0
100%	Stn.57	15.4.3	Fire Detection System - Maintenance	1	LS	15	7	8	\$5,000	\$2,667
100%	Stn.57	15.4.4	Wet & Dry Fire Sprinkler System - Contingency	1	LS	10	10	-	\$5,500	\$0
100%	Stn.57	15.5.2	Water Heater - Replace	3	EA	15	4	11	\$7,920	\$5,808
100%	Stn.57	15.6.7	HVAC Units - Replace	1	EA	15	8	7	\$11,000	\$5,133
100%	Stn.57	15.6.8	Furnace - Replace	5	EA	10	6	4	\$13,750	\$5,500
100%	Stn.57	15.6.9	Infrared Overhead Heaters - Replace	1	LS	10	10	-	\$5,000	\$0
33%	Stn.57	15.7.2	Exhaust Fans - Contingency	8	EA	5	5	-	\$4,360	\$0
100%	Stn.57	16.3.2	Electrical System - Contingency	1	EA	20	10	10	\$6,600	\$3,300
100%	Stn.57	16.5.3	Emergency Generator - Contingency	1	EA	20	20	-	\$8,800	\$0
100%	Stn.57	16.6.2	Exterior Light Fixtures - Replace	5	EA	15	2	13	\$2,750	\$2,383
100%	Stn.57	16.8.2	Fire Control Panel - Replace	1	EA	20	10	10	\$3,850	\$1,925
100%	Stn.57	18.1.2	Security / Surveillance System - Upgrade	1	LS	10	1	9	\$15,000	\$13,500
FULLY FUNDED BALANCE									Total	\$942,417

CURRENT RESERVE BALANCE = \$170,000

PERCENT FULLY FUNDED = 18%

December 5, 2019

ABBREVIATION KEY

EA each
BLDG building(s)
FIXT fixture(s)

LF linear foot
LS lump sum
SF square feet

SQ roofing square
SY square yard
ZN zone



NORTHSHORE FIRE DEPARTMENT

Kenmore & Lake Forest Park, Washington



STANDARD LEVEL 1 CAPITAL RESERVE STUDY WITH A SITE VISIT

With funding recommendations for the 2020 fiscal year

Issued December, 2019

Next Update: **Level 3** by December, 2020

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EXECUTIVE SUMMARY

Description

Northshore Fire Department has one station serving Lake Forest Park and Kenmore and one serving Lake Forest Park, Washington. This Reserve Study meets the requirements of the Washington Unified Common Interest Owner Act for a Level 1 Reserve Study with a site visit, and was prepared by an independent Reserve Study Professional.

Background

The Northshore Fire Department consists of Station 51 and Station 57. The headquarters are housed at Station 51, along with a training facility. Construction Station 51 was completed in 2011; construction of Station 57 was completed in 1995.

The recommended annual contribution to reserves for 2020 is \$162,300.

The prefix before the component number helps to distinguish which fire station a component references. "Stn.51" is abbreviated for Station 51 and "Stn.57" is abbreviated for Station 57.

Financial Information for the Current 2019 Fiscal Year

Reserve Account Balance on January 1, 2019	\$170,000
Annual Operating Budget	\$9,948,992
Component Inclusion Threshold (1% of the Operating Budget)	\$99,490
Annual Budgeted Contribution to Reserves (2019)	\$30,000
Remaining Contributions to Reserves for the Year	\$30,000
Planned or Implemented Special Assessment	None
Fully Funded Balance	\$942,417
Percent Funded at Time of Study	18%
Funding Status at Time of Study	High Risk for a Special Assessment

Recommended Contribution to Reserves Starting in 2020

2020 Recommended Annual Contribution Rate	\$162,300
Breakdown of the Recommended Contribution :	
2020 Recommended Contribution per Month	\$13,525
2020 Baseline Funding Plan Contribution Rate	\$153,900
2020 Full Funding Plan Contribution Rate	\$185,300

The recommended reserve contribution represents a Threshold Funding Plan to prevent special assessments over the course of the 30-year study **while maintaining a minimum reserve account balance of one year's contribution to reserves.** The fiscal year for the Reserve Study is a calendar year. Cost projection accuracy decreases into the distant future. Assumptions should be reconsidered and updated with each revision of the study.

While Northshore Fire Department is not required to comply with the Washington Unified Common Interest Owner Act, this report does comply with the requirements of RCW 64.90. Legal references to "associations" remain in the document. Northshore Fire Department is under no legal requirement to fund reserves.



Five Years At A Glance 2020 Through 2024

The following reserve funded expenses are expected to occur in the next five years at Northshore Fire Department in **constant dollar values**.

Year 1 (2020) Anticipated Maintenance	Estimated Cost
Stn.51 2.4.1 Concrete - Paving Repairs	\$18,190
Stn.51 2.4.2 Concrete - Repaint Stalls & Curbs	\$1,670
Stn.51 6.4.3 Fiber Cement Board Siding - Repair	\$6,140
Stn.51 9.8.4 Fiber Cement Board Siding - Caulk & Paint	\$21,190
Stn.51 10.4.1 Exterior Signage - Refurbish	\$2,500
Stn.51 12.2.4 Duty Crew Kitchen Interiors - Refurbish	\$10,000
Stn.51 12.2.5 Duty Crew Laundry Interiors - Refurbish	\$2,000
Stn.51 12.2.7 Duty Crew Restrooms - Refurbish	\$16,500
Stn.51 16.6.1 Exterior Light Fixtures - Replace	\$10,000
Stn.51 17.1.1 Fireblast 451 - Maintenance	\$10,000
Stn.51 18.1.1 Security / Surveillance System - Replace	\$16,000
Stn.57 2.6.1 Asphalt Paving - Repair	\$4,040
Stn.57 2.6.2 Asphalt Pavement- Seal Coat & Restripe	\$5,050
Stn.57 18.1.2 Security / Surveillance System - Upgrade	\$15,000
Total Estimated Expenses for Year 1 (2020)	\$138,280

Year 2 (2021) Anticipated Maintenance	Estimated Cost
Stn.57 7.4.8 Roof Inspection & Minor Repair	\$3,000
Stn.57 16.6.2 Exterior Light Fixtures - Replace	\$2,750
Total Estimated Expenses for Year 2 (2021)	\$5,750

Year 3 (2022) Anticipated Maintenance	Estimated Cost
Stn.51 2.7.3 Gate Operator - Maintenance	\$1,650
Stn.51 3.3.1 Concrete Walkways - Repair	\$5,450
Stn.51 8.2.5 Doors & Hardware - Maintenance	\$3,580
Stn.51 9.8.1 Cedar Wood Siding - Maintenance	\$21,880
Stn.51 9.8.2 Concrete Siding - Maintenance	\$5,060
Stn.51 11.6.2 Unimac Gear Extractor - Replace	\$8,800
Stn.51 11.6.3 Ramair Gear Dryer - Replace	\$11,000
Stn.51 12.1.7 Public Meeting Room - Refurbish	\$15,000
Stn.51 12.4.7 1st Floor Stained Concrete - Refurbish	\$15,150
Stn.51 15.3.2 Storm Water System - Contingency	\$5,000
Stn.57 12.3.4 Front Reception Desk & Office - Remodel	\$25,000
Total Estimated Expenses for Year 3 (2022)	\$117,570



Year 4 (2023) Anticipated Maintenance	Estimated Cost
Stn.51 8.2.1 Folding Bay Doors & Hardware - Maintenance	\$5,500
Stn.51 8.2.3 Overhead Bay Door Operator - Contingency	\$12,760
Stn.57 3.3.3 Exterior Concrete Paving - Repair	\$3,200
Stn.57 9.8.5 Front Entry Steel Framed Structure - Paint	\$2,250
Stn.57 15.5.2 Water Heater - Replace	\$7,920
Total Estimated Expenses for Year 4 (2023)	\$31,630

Year 5 (2024) Anticipated Maintenance	Estimated Cost
Stn.51 2.7.2 Prefinished Metal Fence & Gates - Maintenance	\$7,300
Stn.51 2.8.1 Wood Benches - Maintenance	\$2,200
Stn.51 7.4.6 Roof Inspection & Minor Repair	\$6,130
Stn.51 11.4.2 Duty Crew Kitchen Equipment - Contingency	\$15,000
Stn.51 11.6.1 Laundry Equipment - Contingency	\$3,740
Stn.51 12.1.4 Bunk Gear Storage - Refurbish	\$8,000
Stn.51 12.2.3 Duty Crew Sleep Room Interiors - Refurbish	\$24,750
Stn.51 14.1.2 Elevators - 5 Year Load Test	\$5,500
Stn.51 15.2.1 Plumbing System - Contingency	\$5,000
Stn.51 15.4.1 Fire Detection System - Maintenance	\$2,500
Stn.51 15.6.5 HVAC System - Contingency	\$5,000
Stn.51 15.7.1 Exhaust Fans - Contingency	\$7,620
Stn.57 8.2.8 Common Doors & Hardware - Maintenance	\$3,320
Stn.57 11.6.4 Laundry Equipment - Contingency	\$3,300
Stn.57 12.3.2 Apparatus Bay - Refurbish	\$13,500
Stn.57 12.3.3 Hallway & Stairwell Walls & Ceiling - Paint	\$7,000
Stn.57 12.3.5 Kitchen - Remodel	\$10,000
Stn.57 12.3.6 Day / Dining Room - Remodel	\$15,000
Stn.57 15.3.3 Irrigation System - Contingency	\$2,500
Stn.57 15.7.2 Exhaust Fans - Contingency	\$4,360
Total Estimated Expenses for Year 5 (2024)	\$151,720

Many factors may influence the actual costs that may be experienced. The quality of replacement materials of items can significantly impact cost, as well as the timing between replacements. The use of Architects or independent construction managers to specify and oversee work may also cause additional expenses. Condominium associations typically experience higher costs than other comparable multifamily projects, in part due to the difficulty contractors have obtaining insurance to work on condominium buildings.



INTRODUCTION

Purpose of a Capital Reserve Study

The purpose of a Reserve Study is to recommend a reasonable annual reserve contribution rate made by an organization to its reserve account. Reserve accounts are established to fund major maintenance, repair, and replacement of common elements, including limited common elements, expected within the next thirty years. A Reserve Study is intended to project availability of adequate funds for the replacement or major repair of any significant component of the property as it becomes necessary without relying on special assessments. It is a budget planning tool which identifies the current status of the reserve account and a stable and equitable Funding Plan to offset the

anticipated future major shared expenditures. Each reserve component is evaluated to determine the current condition, the remaining useful life, and the estimated replacement cost. This information is combined into a spreadsheet to determine funding requirements and establish the annual contribution rate needed to minimize the potential for special assessments. All costs and annual reserve fund balances are shown in constant dollars, and with adjustments for annual inflation and interest earned. Ideally, an even level of contributions is established that maintains a positive balance in the reserve account over the timeline the study examines.

A Reserve Study also calculates a theoretical “Fully Funded Balance”. Fully Funded Balance is the sum total of the reserve components’ depreciated value using a straight line depreciation method.

To calculate each component’s depreciated value:

$$\text{Depreciated Value} = \text{Current Replacement Cost} \times \frac{\text{Effective Age}}{\text{Expected Useful Life}}$$

By comparing the actual current reserve fund balance, to the theoretical Fully Funded Balance a Percent Fully Funded is derived.

These expenses could be emergency repairs not covered by insurance, or expenses that differ from the existing Reserve Study in terms of timing or cost. The Fully Funded Balance is neither the present replacement cost of all of the Organization’s reserve components, nor does it have a mathematical relationship to the recommended threshold reserve contribution funding plan.

The percent fully funded acts as a measuring tool to assess an organization’s ability to absorb unplanned expenses.



Three levels of Reserve Studies:

Level 1: The first level, an initial Reserve Study, must be based upon a visual site inspection conducted by a Reserve Study Professional. This is also known as a full Level 1 Reserve Study with a site visit.

Level 2: Thereafter at least every three years, an updated Reserve Study must be prepared, which again is based upon a visual site inspection conducted by a Reserve Study Professional. This is also known as a Level 2 update with a site visit.

Level 3: As noted earlier, the Association is required to update its Reserve Study every year. However, in two of the three years, the annual updates do not require a site visit. This is also known as a Level 3 update without a site visit.

Level 4: The Community Associations Institute defines a Level 4 reserve study for communities under construction as a Preliminary, Community Not Yet Constructed reserve study.

Our Approach to a Reserve Study

Reserve Consultants LLC employs a “Reasonable Approach” when evaluating reserve components in order to draft a study that is of greatest value to our clients. This means we attempt to predict, based on the costs involved and the client’s objectives, what a reasonable person will decide to have done when maintenance, repairs, or replacement become necessary. For example, a reasonable person will not replace a fence when it only needs to be repainted. The benefit of this is that reserve contributions are minimized to allow for what is most likely to occur. Our studies are not based on a worst-case scenario, but rather on what we expect is most likely to occur. Our approach assumes minor problems will be corrected as they occur, before they become major problem.

Many factors may influence the actual costs that the organization will experience. The quality of replacement materials of items can significantly impact cost, as well as the timing between replacements. The use of Architects or independent construction managers to specify and oversee work may also cause additional expenses. Reserve Consultants LLC has been completing reserve studies and project management in the Pacific Northwest since 1992 and bases component repair and replacement cost estimates on this experience, as well information provided by the organization.

This study
is a Level 1
Reserve Study
with a site visit.

The next required update for Northshore Fire Department is a **Level 3** study by December, 2020.

Several sources were used in drafting this report. These include:

- Site visit and visual inspection of a sampling of the components;
- Input provided by organization representatives;
- Review of a list of components the Organization is responsible for;
- Generally accepted construction, maintenance, and repair guidelines



Government Requirements for a Reserve Study

Effective July 1, 2018, the **Washington Unified Common Interest Act (WUCIOA)** has impacted common interest communities. Our reserve studies comply with WUCIOA.

RCW 64.90.550 §2 states that a reserve study must include:

- (a) A reserve component list, including any reserve component, the replacement cost of which exceeds one percent of the annual budget of the association, excluding contributions to the reserves for that reserve component. If one of these reserve components is not included in the reserve study, the study must explain the basis for its exclusion. The study must also include quantities and estimates for the useful life of each reserve component, the remaining useful life of each reserve component, and current major replacement costs for each reserve component;
- (b) The date of the study and a disclosure as to whether the study meets the requirements of this section;
- (c) The following level of reserve study performed:
 - a. Level I: Full reserve study funding analysis and plan;
 - b. Level II: Update with visual site inspection; or
 - c. Level III: Update with no visual site inspection;
- (d) The association's reserve account balance;
- (e) The percentage of the fully funded balance to which the reserve account is funded;
- (f) Special assessments already implemented or planned;
- (g) Interest and inflation assumptions;
- (h) Current reserve account contribution rates for a full funding plan and a baseline funding plan;
- (i) A recommended reserve account contribution rate for a full funding plan to achieve one hundred percent fully funded reserves by the end of the thirty-year study period, a recommended reserve account contribution rate for a baseline funding plan to maintain the reserve account balance above zero throughout the thirty-year study period without special assessments, and a reserve account contribution rate recommended by the reserve study professional;
- (j) A projected reserve account balance for thirty years based on each funding plan presented in the reserve study;
- (k) A disclosure on whether the reserve study was prepared with the assistance of a reserve study professional, and whether the reserve study professional was independent; and
- (l) A statement of the amount of any current deficit or surplus in reserve funding expressed on a dollar per unit basis. The amount is calculated



by subtracting the association's reserve account balance as of the date of the study from the fully funded balance, and then multiplying the result by the fraction or percentage of the common expenses of the association allocable to each unit; except that if the fraction or percentage of the common expenses of the association allocable vary by unit, the association must calculate any current deficit or surplus in a manner that reflects the variation.

In addition, the WUCIOA requires the following disclosure in every Reserve Study (RCW 64.90.550 § 3):

"This reserve study should be reviewed carefully. It may not include all common and limited common element components that will require major maintenance, repair, or replacement in future years, and may not include regular contributions to a reserve account for the cost of such maintenance, repair, or replacement. The failure to include a component in a reserve study, or to provide contributions to a reserve account for a component, may, under some circumstances, require the association to (1) defer major maintenance, repair, or replacement, (2) increase future reserve contributions, (3) borrow funds to pay for major maintenance, repair, or replacement, or (4) impose special assessments for the cost of major maintenance, repair, or replacement."

Furthermore, RCW 64.90.550 §2 states that the budget must include:

- (d) the current amount of regular assessments budgeted for contribution to the reserve account;
- (e) A statement of whether the association has a reserve study that meets the requirements of RCW 64.90.550 of this act and, if so, the extent to which the budget meets or deviates from the recommendations of that reserve study; and
- (f) The current deficiency or surplus in reserve funding expressed on a per unit basis.

RCW 64.90.550 §2 (d) – (f) requirements are covered by the Supplemental Budget Information disclosure that is prepared with each reserve study when the Association is ready to ratify the budget.



Limitations and Assumptions of a Reserve Study

This Reserve Study is not a report on the condition of the assets maintained by Northshore Fire Department, or a detailed report of necessary maintenance to the assets. It is also not an investigation into or comment on the quality of construction of the reserve components, or whether the construction complies with the building code or the requirements of the Washington Common Interest Ownership Act (WUCIOA).

The component list is based on information provided by Northshore Fire Department. Reserve Consultants LLC does not provide legal interpretations of governing documents or auditing services on account information provided.

The observations made by Reserve Consultants LLC are limited to a visual inspection of a sample of the reserve components. Unless informed otherwise, our assumption is that the components are constructed in substantial compliance with the building code and to industry standards, and that it will receive ordinary and reasonable maintenance and repair by Northshore Fire Department. These assumptions include that most reserve components will achieve their normal useful lives for similar components in the Pacific Northwest, and that they will be replaced when necessary to prevent damage to other reserve components.

This Reserve Study assumes that the assets will be maintained to keep a good level of appearance, with a special emphasis on retaining the original appearance of the assets to the greatest possible extent. The analysis also assumes that Northshore Fire Department will replace materials as they are required with good quality materials, installed by qualified, licensed, contractors. We further assume that the assets will experience the full typical useful life for the new materials installed.

The long-term nature of this study requires that certain assumptions and predictions be made about future events. Since there can be no guarantee that these future events will occur as assumed, this analysis must be viewed in light of the circumstances under which it was conducted. Reasonable effort has been made to ensure that the conclusions of this report are based on reliable information and sound reasoning.

This report should be updated annually with actual repair costs, reserve fund balances, etc. Every three years it should be updated with a site inspection and professional review. Regular updating will allow changes based on actual occurrences and adjustments for the cost of repairs to be incorporated into the annual reserve contributions. This will allow any savings or additional costs to be properly allocated among unit owners.



Inflation and Interest Rate Projections

When making estimates on the future inflation and interest rates, we use a staggered approach to more accurately reflect future economic projections.

For **inflation**, we use the construction industry inflation rates published by RS Means, which differ from the consumer inflation index. The average annual construction inflation increase since 1966 is 4.16%. We do not apply inflation to the annual reserve contribution in Year 0. Likewise, we do not apply inflation to the recommended reserve contribution in Year 1 since this is the first year at the recommended contribution rate. Inflation applied to the components on the inflated spreadsheet is compounded annually; the values are listed for each year at the bottom of the inflated spreadsheet.

For **interest** rates, we analyze the historical data provided by the Board of Governors of the Federal Reserve. The average annual interest rate since 1987 is 3.44%. The interest for organizations is typically lower than average due to conservative investing options that are usually employed by organizations. Interest is applied to Year 0 only in the constant spreadsheet so that the starting reserve fund balance in Year 1 is the same for both the constant and inflated spreadsheets, as illustrated on the following page.

Inflation and Interest Rate Projections for Northshore Fire Department

Years Applied	Contribution Inflation	Inflation	Interest
Year 0 (2019) through Year 1 (2020)	0%	3%	2%
Year 2 (2021) through Year 10 (2029)	3%	3%	2%
Year 11 (2030) through Year 30 (2049)	4%	4%	3%



Starting Reserve Fund Balance for Year 1 (2020)

The starting reserve fund balance for 2020 has been estimated by combining the following figures that were provided by an organization representative:

\$170,000	reserve fund balance as of January 1, 2019
- (\$43,000)	anticipated reserve maintenance expenses in 2019
+ \$0	planned special assessment in 2019
+ \$30,000	remaining reserve contributions for 2019
+ \$2,998	projected interest on the 2019 reserve fund balance
<hr/>	
\$159,998	estimated beginning balance for fiscal year 2020

The actual or projected total reserve fund balance presented in the Reserve Study is based on information provided to RCL and was not audited.



ORGANIZATION OVERVIEW

Northshore Fire Department has one station serving Kenmore and one serving Lake Forest Park, Washington.

The Department headquarters are housed at Station 51, along with a training facility, in Kenmore. Construction Station 51 was completed in 2011.

Station 57 occupies a site in Lake Forest Park and was constructed in 1995.



Review of General Conditions

Station 51

The overall appearance of Station 51 was very good. The facility is constructed of durable materials and is regularly maintained. We understand that the Station invested in landscaping improvements this year.

The exterior siding is a combination of brick, cedar and fiber cement board siding. The wood was refinished in the recent past and the brick appeared to be weathering as expected. No issues were reported with the roofing systems.

A Training tower is located in the parking area adjacent to the Station. It is constructed of CMU block and has both metal standing seam and asphalt shingle roofing.



Station 57

The general appearance of Station 57 was good. The facility is well maintained and is scheduled to have a major renovation starting this year.

Renovations include the Apparatus Bay, which will receive new fiberglass reinforced plastic (FRP) panels and ceiling tiles, an updated Locker Room, and modifications to the existing restrooms. Carpeting throughout the facility will be removed, with polished concrete installed in its place.

The exterior of the building is brick with a standing metal seam roof topping the building. An asphalt lot provides parking at the front of the building.



COMPONENTS INCLUDED IN THE RESERVE STUDY

We have followed the reserve study guidelines for component inclusion required by WUCIOA. A reserve component is defined as a common component that the replacement cost of which exceeds one percent of the annual budget of the association, excluding contributions to the reserves for that reserve component. If one of these reserve components is not included in the reserve study, the study must explain the basis for its exclusion. (RCW 64.90.550). While the law defines the inclusion threshold to be 1% of the operating budget, or \$99,490, components valued less than the legal threshold are included to better capture reserve funding for Northshore Fire Department.

Component Funding Excluded from the Reserve Study

Operating Budget

The following components may qualify for inclusion within the Reserve Study, but have been excluded from the budget because they are maintained with funds from the operating budget:

- acoustic ceiling tiles
- asphalt walkway repairs
- BBQ grill
- diesel tank @ Station 57
- glazing replacement
- gym equipment
- interior light fixtures
- IT equipment
- Tower wood trim & metal shutters
- rubber stair treads @ Station 57



RESERVE COMPONENT SUMMARY

Stn.51 2.4.1 Concrete - Paving Repairs

Maintenance Cycle: 10 years

Next Maintenance: Year 1 (2020)

Quantity: 65,610 Square Feet

Unit Cost: \$8.40 / SF

Estimate: 65,610 SF X 3% X \$8.40/SF = \$16,534 + tax = \$18,190



Future Maintenance	
Year	Cost
1 (2020)	\$18,190
11 (2030)	\$18,190
21 (2040)	\$18,190

There is a large paved area adjacent to Station 51 providing public parking, secured access parking, entry to the Apparatus Bay and a significant paved area around the training tower. Due to the brittle nature of concrete, periodic repairs will be necessary. Funds are budgeted in conjunction with repainting since the same contractor can often complete both projects. It was reported that there are a few areas of concern that will likely be addressed in the near future.

Stn.51 2.4.2 Concrete - Repaint Stalls & Curbs

Maintenance Cycle: 10 years

Next Maintenance: Year 1 (2020)

Quantity: 76 Each

Unit Cost: \$20.00 / EA

Estimate: 76 EA X 100% X \$20.00/EA = \$1,520 + tax = \$1,670



Future Maintenance	
Year	Cost
1 (2020)	\$1,670
11 (2030)	\$1,670
21 (2040)	\$1,670

Periodic deep cleaning and restriping of the stalls and curbs will be necessary as the concrete is exposed to the elements. We understand that the Station power washes the concrete as needed. The striping in the parking area is coming to the end of its useful life.

Stn.51 2.7.1 Prefinished Metal Fence - Replace

Maintenance Cycle: 30 years

Next Maintenance: Year 21 (2040)

Quantity: 885 Linear Feet

Unit Cost: \$75.00 / LF

Estimate: 885 LF X 100% X \$75.00/LF = \$66,375 + tax = \$73,010



Future Maintenance	
Year	Cost
21 (2040)	\$73,010

The fencing is factory finished metal and should require minimal maintenance. The budget provides funds to replace the fencing, three walk through gates and one swing gate at the end of its anticipated useful life. The fence and gates were in good condition overall.

Stn.51 2.7.2 Prefinished Metal Fence & Gates - Maintenance

Maintenance Cycle: 10 years

Next Maintenance: Year 5 (2024)

Quantity: 885 Linear Feet

Unit Cost: \$75.00 / LF

Estimate: 885 LF X 10% X \$75.00/LF = \$6,638 + tax = \$7,300



Future Maintenance	
Year	Cost
5 (2024)	\$7,300
15 (2034)	\$7,300
25 (2044)	\$7,300

This component budgets funds for periodic repairs to the fencing and gates, including touch up painting, as needed. No areas of concern were noted.

Stn.51 2.7.3 Gate Operator - Maintenance

Maintenance Cycle: 3 years

Next Maintenance: Year 3 (2022)

Quantity: 1 Each

Unit Cost: \$1,500.00 / EA

Estimate: 1 EA X 100% X \$1,500.00/EA = \$1,500 + tax = \$1,650



Future Maintenance	
Year	Cost
3 (2022)	\$1,650
6 (2025)	\$1,650
9 (2028)	\$1,650
12 (2031)	\$1,650
15 (2034)	\$1,650
18 (2037)	\$1,650
21 (2040)	\$1,650
24 (2043)	\$1,650
Repeat Every 3 Years	

A hydraulic swing gate with photo eyes controls access to the upper section of the parking lot. It was reported that the in-ground sensors had approximately \$1,500 worth of work completed in the recent past. The photo eyes were out of service at the time of our site visit. The budget is intended to fund periodic repairs to the various components of the gate operator. The next maintenance is budgeted in three years since it is assumed that the sensors will be fixed this year.

Stn.51 2.8.1 Wood Benches - Maintenance

Maintenance Cycle: 10 years

Next Maintenance: Year 5 (2024)

Quantity: 4 Each

Unit Cost: \$500.00 / EA

Estimate: 4 EA X 100% X \$500.00/EA = \$2,000 + tax = \$2,200



Future Maintenance	
Year	Cost
5 (2024)	\$2,200
15 (2034)	\$2,200
25 (2044)	\$2,200

Wood benches are built into the cast in place concrete and will require periodic maintenance. The benches were weathering well and were in use while we were on site.

**Stn.51 2.9.1 Landscaping - Maintenance****Maintenance Cycle:** 8 years**Quantity:** 1 Lump Sum**Estimate:** \$15,000**Next Maintenance:** Year 8 (2027)**Unit Cost:** \$15,000.00 / LS

Future Maintenance	
Year	Cost
8 (2027)	\$15,000
16 (2035)	\$15,000
24 (2043)	\$15,000

Approximately \$11,000 was spent in 2019 on landscaping. The landscaping budget provides funds for major updates to the landscaping as plants mature, outgrow their beds and/or for tree maintenance.

Stn.51 3.3.1 Concrete Walkways - Repair**Maintenance Cycle:** 6 years**Quantity:** 5,700 Square Feet**Estimate:** 5,700 SF X 10% X \$8.70/SF = \$4,959 + tax = \$5,450**Next Maintenance:** Year 3 (2022)**Unit Cost:** \$8.70 / SF

Future Maintenance	
Year	Cost
3 (2022)	\$5,450
9 (2028)	\$5,450
15 (2034)	\$5,450
21 (2040)	\$5,450
27 (2046)	\$5,450

While the City of Kenmore owns the sidewalks, the responsibility for repairing sidewalks typically rests on the property owner. No trip hazards were noted while on site. We budget to repair up to 3% of the concrete walkways, curbs and pavement each repair cycle. We recommend grinding or cutting the concrete to resolve trip hazards where possible. Cracks, spalling and/or damaged areas that cannot be corrected by grinding are intended to be covered by this budget.

**Stn.51 3.3.2 Cast Concrete Retaining Walls - Repair****Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 740 Linear Feet**Unit Cost:** \$390.00 / LF**Estimate:** 740 LF X 5% X \$390.00/LF = \$14,430 + tax = \$15,870

Future Maintenance	
Year	Cost
6 (2025)	\$15,870
21 (2040)	\$15,870

We do not anticipate that the concrete retaining walls will need to be replaced within the next 30 years. This component budgets funds for inspections and repairs to ensure the integrity of the walls flanking the perimeter of the parking lot. The walls appeared to be performing well.

Stn.51 6.1.1 Garbage Bin Enclosure - Repair**Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 1 Lump Sum**Unit Cost:** \$2,500.00 / LS**Estimate:** \$2,500

Future Maintenance	
Year	Cost
6 (2025)	\$2,500
21 (2040)	\$2,500

The garbage bin enclosure is constructed of cast in place concrete walls with steel framed gates with wood infill. Periodic repairs will be necessary, as will maintenance to the wood to keep the gates in optimal condition. The gates appeared to be serviceable and weathering well.

Stn.51 6.2.1 Pedestal Paver - Maintenance

Maintenance Cycle: 30 years

Next Maintenance: Year 21 (2040)

Quantity: 180 Square Feet

Unit Cost: \$37.00 / SF

Estimate: 180 SF X 25% X \$37.00/SF = \$1,665 + tax = \$1,830



Future Maintenance	
Year	Cost
21 (2040)	\$1,830

The 2nd floor outdoor patio has concrete pavers on pedestals which will need to be removed to replace the waterproofing membrane underneath. This component provides funds to replace up to 25% of the pavers if needed. The pavers appeared to be wearing well, with no obvious cracks or staining noted.

Stn.51 6.2.2 PVC Thermoplastic Membrane - Replace

Maintenance Cycle: 30 years

Next Maintenance: Year 21 (2040)

Quantity: 180 Square Feet

Unit Cost: \$20.00 / SF

Estimate: 180 SF X 100% X \$20.00/SF = \$3,600 + tax = \$3,960



Future Maintenance	
Year	Cost
21 (2040)	\$3,960

A PVC thermoplastic membrane was specified as the waterproofing membrane under the patio pedestal pavers. The membrane will need to be periodically replaced as the material degrades to ensure it keeps out moisture as designed. The Station is likely to realize savings if the deck's membrane is replaced in conjunction with the roofing membrane to save on contractor mobilization fees. We were not able to observe the membrane during the site visit, but understand that there are no outstanding issues.

Stn.51 6.4.1 Brick Siding - Maintenance

Maintenance Cycle: 20 years

Next Maintenance: Year 11 (2030)

Quantity: 7,010 Square Feet

Unit Cost: \$25.00 / SF

Estimate: 7,010 SF X 5% X \$25.00/SF = \$8,763 + tax = \$9,640



Future Maintenance	
Year	Cost
11 (2030)	\$9,640

Two types of brick provide texture to the exterior of the building. We do not anticipate that the brick will need replacement over the next 30 years. This component budgets funds for periodic tuck pointing and/or steam cleaning to keep the building in optimal condition. At this time there is not a budget for sealing the brick and do not recommend doing so unless a specific water intrusion issue arises.

Stn.51 6.4.2 CMU Wall - Tuck Point

Maintenance Cycle: 20 years

Next Maintenance: Year 11 (2030)

Quantity: 6,515 Square Feet

Unit Cost: \$7.50 / SF

Estimate: 6,515 SF X 100% X \$7.50/SF = \$48,863 + tax = \$53,750



Future Maintenance	
Year	Cost
11 (2030)	\$53,750

The training tower is constructed of split face and smooth face CMU. We anticipate that the CMU will not need to be replaced within the next 30 years. Periodic tuck pointing of the mortar joints may be needed in the future, which this component is intended to fund.

**Stn.51 6.4.3 Fiber Cement Board Siding - Repair****Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 6,420 Square Feet**Unit Cost:** \$29.00 / SF**Estimate:** 6,420 SF X 3% X \$29.00/SF = \$5,585 + tax = \$6,140

Future Maintenance	
Year	Cost
1 (2020)	\$6,140
11 (2030)	\$6,140
21 (2040)	\$6,140

Some areas of Station 51 have fiber cement board, which appears to be weathering well overall. A few cracked boards were noted in the HVAC well area, which we recommend be replaced with the next repainting.

Stn.51 6.4.4 Metal Siding - Replace**Maintenance Cycle:** 35 years**Next Maintenance:** Year 26 (2045)**Quantity:** 2,340 Square Feet**Unit Cost:** \$16.00 / SF**Estimate:** 2,340 SF X 100% X \$16.00/SF = \$37,440 + tax = \$41,180

Future Maintenance	
Year	Cost
26 (2045)	\$41,180

The metal siding is located along the apparatus bay exterior and above some windows. The factory finished panels are weathering as expected and are expected to require minimal maintenance. This component budgets for replacement of the panels at the end of their anticipated useful life.

**Stn.51 7.1.1 Sealant Joints - Replace****Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 1,700 Linear Feet**Unit Cost:** \$12.00 / LF**Estimate:** 1,700 LF X 100% X \$12.00/LF = \$20,400 + tax = \$22,440

Future Maintenance	
Year	Cost
6 (2025)	\$22,440
21 (2040)	\$22,440

Sealant joints will need to be periodically inspected and replaced. Areas that are failing should be removed and recaulked to maintain an effective barrier against moisture. As the building ages, it is likely that not all of the sealant will need to be replaced at once; areas with the most weather exposure will have the shortest useful life. The budgets reflects total replacement until the pattern of wear is determined. This component focuses on sealant joints in areas with masonry, specifically around doors and windows. Sealant joints in the areas with fiber cement board should be addressed with each paint cycle.

Stn.51 7.3.1 Scuppers, Gutters & Downspouts - Replace**Maintenance Cycle:** 30 years**Next Maintenance:** Year 21 (2040)**Quantity:** 560 Linear Feet**Unit Cost:** \$5.80 / LF**Estimate:** 560 LF X 100% X \$5.80/LF = \$3,248 + tax = \$3,570

Future Maintenance	
Year	Cost
21 (2040)	\$3,570

The building has a combination of scuppers, downspouts and gutters. All appeared to be functioning as expected and attached appropriately. We budget for replacing these components in conjunction with the roof replacement since the two systems are integrated.

**Stn.51 7.4.1 Low Sloped Ribbed Roof - Replace****Maintenance Cycle:** 30 years**Next Maintenance:** Year 21 (2040)**Quantity:** 101 Roofing Squares**Unit Cost:** \$1,700.00 / SQ**Estimate:** 101 SQ X 100% X \$1,700.00/SQ = \$172,210 + tax = \$189,430

Future Maintenance	
Year	Cost
21 (2040)	\$189,430

Visible sections of the roof have a Sika Sarnafil Décor membrane system, giving the roof the appearance of a standing metal seam roof. The system is a thermoplastic PVC membrane. No issues were reported and the roof was clean with no concerns noted.

Stn.51 7.4.2 Low Sloped Smooth Roof - Replace**Maintenance Cycle:** 30 years**Next Maintenance:** Year 21 (2040)**Quantity:** 95 Roofing Squares**Unit Cost:** \$1,200.00 / SQ**Estimate:** 95 SQ X 100% X \$1,200.00/SQ = \$113,472 + tax = \$124,820

Future Maintenance	
Year	Cost
21 (2040)	\$124,820

Sections of the roof that are not visible from the ground have a smooth Sika Sarnafil thermoplastic PVC membrane system. The roof has good slope and no concerns were noted while on site. The HVAC well area had some water ponding, which is to be expected in an area with little slope. This area in particular should be monitored for issues with the membrane, especially after severe weather events.

Stn.51 7.4.3 Tower Composition Shingles - Replace

Maintenance Cycle: 30 years

Next Maintenance: Year 21 (2040)

Quantity: 2 Roofing Squares

Unit Cost: \$550.00 / SQ

Estimate: 2 SQ X 100% X \$550.00/SQ = \$1,100 + tax = \$1,210



Future Maintenance	
Year	Cost
21 (2040)	\$1,210

The Tower has a small section of roofing with asphalt composition shingles. Since the shingles are not over occupied space, the useful life is longer than normally budgeted. The shingles appeared to be wearing as anticipated.

Stn.51 7.4.4 Tower Metal Roof - Replace

Maintenance Cycle: 50 years

Next Maintenance: Year 41 (2060)

Quantity: 6 Roofing Squares

Unit Cost: \$780.00 / SQ

Estimate: 6 SQ X 100% X \$780.00/SQ = \$4,680 + tax = \$5,150

[illegible]

The tallest roof on the Tower is metal standing seam. We were not able to observe the top of the roof directly, but since it is not located over occupied space the anticipated useful life has been extended. From the ground the roof appeared to be functioning as expected.

Stn.51 7.4.5 Apparatus Bay Metal Roof - Replace

Maintenance Cycle: 40 years

Next Maintenance: Year 31 (2050)

Quantity: 19 Roofing Squares

Unit Cost: \$780.00 / SQ

Estimate: 19 SQ X 100% X \$780.00/SQ = \$14,820 + tax = \$16,300

[illegible]

The support areas adjacent to the Apparatus Bay have a standing metal seam roof. The roof was clean and was weathering as expected. This component budgets for replacing the roof at the end of its typical useful life.

Stn.51 7.4.6 Roof Inspection & Minor Repair

Maintenance Cycle: 5 years

Next Maintenance: Year 5 (2024)

Quantity: 223 Roofing Squares

Unit Cost: \$500.00 / SQ

Estimate: $223 \text{ SQ} \times 5\% \times \$500.00/\text{SQ} = \$5,572 + \text{tax} = \$6,130$



Future Maintenance	
Year	Cost
5 (2024)	\$6,130
10 (2029)	\$6,130
15 (2034)	\$6,130
20 (2039)	\$6,130
25 (2044)	\$6,130
30 (2049)	\$6,130

We have allocated up to 5% cost of replacing the PVC roof to for repairs to any of the roofs and associated components, such as flashing. Due to the considerable damage potential a leaking roof can cause, we recommend regular cleanings and inspections to maintain the integrity of the weatherproof membrane, flashing and joints.

**Stn.51 8.2.1 Folding Bay Doors & Hardware - Maintenance****Maintenance Cycle:** 5 years**Next Maintenance:** Year 4 (2023)**Quantity:** 5 Each**Unit Cost:** \$10,000.00 / EA**Estimate:** 5 EA X 10% X \$10,000.00/EA = \$5,000 + tax = \$5,500

Future Maintenance	
Year	Cost
4 (2023)	\$5,500
9 (2028)	\$5,500
14 (2033)	\$5,500
19 (2038)	\$5,500
24 (2043)	\$5,500
29 (2048)	\$5,500

The folding bay doors facing 73rd Ave NE have integrated opening hardware and are reportedly operating well. We have budgeted a contingency for maintenance since we do not anticipate that the doors will need total replacement within the next 30 years.

Stn.51 8.2.2 Overhead Bay Doors & Hardware - Replace**Maintenance Cycle:** 30 years**Next Maintenance:** Year 21 (2040)**Quantity:** 4 Each**Unit Cost:** \$5,500.00 / EA**Estimate:** 4 EA X 100% X \$5,500.00/EA = \$22,000 + tax = \$24,200

Future Maintenance	
Year	Cost
21 (2040)	\$24,200

The Apparatus Bay sectional overhead doors facing the parking area have a metal exterior face and fiberglass interior with glass insets. We budget for periodic replacement of the doors to ensure they are operational at all times. We anticipate that funds for regular maintenance, such as spring replacement, will be paid for out of the operating budget.

**Stn.51 8.2.3 Overhead Bay Door Operator - Contingency****Maintenance Cycle:** 5 years**Next Maintenance:** Year 4 (2023)**Quantity:** 4 Each**Unit Cost:** \$2,900.00 / EA**Estimate:** 4 EA X 100% X \$2,900.00/EA = \$11,600 + tax = \$12,760

Future Maintenance	
Year	Cost
4 (2023)	\$12,760
9 (2028)	\$12,760
14 (2033)	\$12,760
19 (2038)	\$12,760
24 (2043)	\$12,760
29 (2048)	\$12,760

The sectional overhead Apparatus Bay doors facing the parking area each have gearhead trolley-style operators. A regular maintenance budget has been set to address issues that may arise, or replace the units as needed. We understand that there have been some issues with the operators, which is not uncommon for these devices.

Stn.51 8.2.4 Coiling Door - Maintenance**Maintenance Cycle:** 30 years**Next Maintenance:** Year 21 (2040)**Quantity:** 2 Each**Unit Cost:** \$4,500.00 / EA**Estimate:** 2 EA X 100% X \$4,500.00/EA = \$9,000 + tax = \$9,900

Future Maintenance	
Year	Cost
21 (2040)	\$9,900

Overhead coiling doors are located at the Tower and on the north end of the Apparatus Bay. We did not see the doors in use, but no problems were reported. We budget for total replacement at the end of their anticipated life span.

Stn.51 8.2.5 Doors & Hardware - Maintenance

Maintenance Cycle: 5 years

Next Maintenance: Year 3 (2022)

Quantity: 5 Each

Unit Cost: \$650.00 / EA

Estimate: 5 EA X 100% X \$650.00/EA = \$3,250 + tax = \$3,580



Future Maintenance	
Year	Cost
3 (2022)	\$3,580
8 (2027)	\$3,580
13 (2032)	\$3,580
18 (2037)	\$3,580
23 (2042)	\$3,580
28 (2047)	\$3,580

We do not anticipate that all of the doors will need to be replaced at once. Instead, the budget provides a contingency to address up to five doors and hardware sets at Station 51 and the Tower every five years. The doors leading to the exterior are steel, while the interior doors are wood. Aluminum storefront doors are addressed in a separate component.

Stn.51 8.3.1 Storefront System - Maintenance

Maintenance Cycle: 15 years

Next Maintenance: Year 6 (2025)

Quantity: 420 Square Feet

Unit Cost: \$83.00 / SF

Estimate: 420 SF X 20% X \$83.00/SF = \$6,972 + tax = \$7,670



Future Maintenance	
Year	Cost
6 (2025)	\$7,670
21 (2040)	\$7,670

An aluminum storefront system is found at the entries to the Station. Depending on the frequency of use, major maintenance will periodically be required. This component budgets up to 20% of the replacement cost for periodic repairs to the doors, gaskets and glazing within the system.

Stn.51 8.3.2 Storefront System - Replace

Maintenance Cycle: 60 years

Next Maintenance: Year 52 (2071)

Quantity: 420 Square Feet

Unit Cost: \$83.00 / SF

Estimate: 420 SF X 100% X \$83.00/SF = \$34,860 + tax = \$38,350

[illegible]

Depending on the frequency of use, the cost for replacing the aluminum storefront system at the entries of the Station will outweigh the cost for repairs and/or the finish on the system may deteriorate to the point of needing replacement. This component budgets for total replacement of the storefront system.

Stn.51 8.5.1 Aluminum Windows - Replace

Maintenance Cycle: 40 years

Next Maintenance: Year 31 (2050)

Quantity: 2,620 Square Feet

Unit Cost: \$60.00 / SF

Estimate: 2,620 SF X 100% X \$60.00/SF = \$157,200 + tax = \$172,920

[illegible]

The windows on the exterior of the building are aluminum frame, which should require little maintenance. Windows are typically replaced because they are not operating properly, to update their appearance and/or to capture better energy efficiency. We expect that failed insulated glazing units will be replaced as needed with funds from the operating budget.

**Stn.51 9.8.1 Cedar Wood Siding - Maintenance****Maintenance Cycle:** 6 years**Next Maintenance:** Year 3 (2022)**Quantity:** 1,530 Square Feet**Unit Cost:** \$13.00 / SF**Estimate:** 1,530 SF X 100% X \$13.00/SF = \$19,890 + tax = \$21,880

Future Maintenance	
Year	Cost
3 (2022)	\$21,880
9 (2028)	\$21,880
15 (2034)	\$21,880
21 (2040)	\$21,880
27 (2046)	\$21,880

It was reported that the exterior cedar wood siding was refinished in 2017 for approximately \$5,000. We recommend a penetrating stain for maximum results. The finish was weathering well at the time of our site visit. We budget for future maintenance cycles.

Stn.51 9.8.2 Concrete Siding - Maintenance**Maintenance Cycle:** 12 years**Next Maintenance:** Year 3 (2022)**Quantity:** 920 Square Feet**Unit Cost:** \$5.00 / SF**Estimate:** 920 SF X 100% X \$5.00/SF = \$4,600 + tax = \$5,060

Future Maintenance	
Year	Cost
3 (2022)	\$5,060
15 (2034)	\$5,060
27 (2046)	\$5,060

Low concrete walls are located around the base of the building, as are cast in place concrete planting beds. The durable surface should require minimal maintenance. Funds are budgeted for periodic professional cleaning. We do not recommend painting the surfaces due to the future maintenance requirements.

**Stn.51 9.8.3 Exterior Steel - Maintenance****Maintenance Cycle:** 6 years**Quantity:** 1 Lump Sum**Estimate:** \$8,000**Next Maintenance:** Year 6 (2025)**Unit Cost:** \$8,000.00 / LS

Future Maintenance	
Year	Cost
6 (2025)	\$8,000
12 (2031)	\$8,000
18 (2037)	\$8,000
24 (2043)	\$8,000
30 (2049)	\$8,000

This component budgets funds to paint the steel components found on the exterior of the facility, including the stairs on the Tower, handrails along the walkways, exterior doors, canopies and steel members on the Station building. Maintaining a regular paint cycle will help protect the steel from moisture, which could lead to corrosion, shortening the useful life of these components. The paint overall was weathering as expected with no areas of corrosion noted.

Stn.51 9.8.4 Fiber Cement Board Siding - Caulk & Paint**Maintenance Cycle:** 8 years**Quantity:** 6,420 Square Feet**Estimate:** 6,420 SF X 100% X \$3.00/SF = \$19,260 + tax = \$21,190**Next Maintenance:** Year 1 (2020)**Unit Cost:** \$3.00 / SF

Future Maintenance	
Year	Cost
1 (2020)	\$21,190
9 (2028)	\$21,190
17 (2036)	\$21,190
25 (2044)	\$21,190

The paint on the fiber cement board around the HVAC well is coming to the end of its useful life. Verify that all exposed (cut) ends of the boards have adequate paint coverage to achieve a full useful life of the fiber cement board. The estimated cost includes funds for caulking with each paint cycle.

**Stn.51 10.4.1 Exterior Signage - Refurbish****Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 1 Lump Sum**Unit Cost:** \$2,500.00 / LS**Estimate:** \$2,500

Future Maintenance	
Year	Cost
1 (2020)	\$2,500
11 (2030)	\$2,500
21 (2040)	\$2,500

Exterior signage is located on the low concrete walls along NE 181st Street and 73rd Ave NE. A large "51" is adjacent to the Apparatus Bay doors along 73rd Ave NE with back lighting. The signage is constructed from durable materials and will not likely need replacement within the next 30 years. This budget provides funds from periodic repairs, including to the lighting elements, to keep the high visibility signage in optimal condition.

Stn.51 10.5.1 Exterior Mail Pedestal Unit - Replace**Maintenance Cycle:** 25 years**Next Maintenance:** Year 16 (2035)**Quantity:** 1 Each**Unit Cost:** \$2,000.00 / EA**Estimate:** 1 EA X 100% X \$2,000.00/EA = \$2,000 + tax = \$2,200

Future Maintenance	
Year	Cost
16 (2035)	\$2,200

An exterior mail pedestal unit is located along NE 181st Street. No issues were reported. This budget provides funds for replacing the unit at the approximate end of useful life.

**Stn.51 11.1.1 Propane Forklift - Replace****Maintenance Cycle:** 20 years**Next Maintenance:** Year 10 (2029)**Quantity:** 1 Each**Unit Cost:** \$20,000.00 / EA**Estimate:** 1 EA X 100% X \$20,000.00/EA = \$20,000 + tax = \$22,000

Future Maintenance	
Year	Cost
10 (2029)	\$22,000
30 (2049)	\$22,000

A used propane forklift was donated to the Station in 2017. The forklift is a useful piece of equipment, so we have budgeted for replacement with a used model in approximately 10 years.

Stn.51 11.4.1 Admin Kitchen Equipment - Contingency**Maintenance Cycle:** 10 years**Next Maintenance:** Year 8 (2027)**Quantity:** 1 Lump Sum**Unit Cost:** \$5,000.00 / LS**Estimate:** \$5,000

Future Maintenance	
Year	Cost
8 (2027)	\$5,000
18 (2037)	\$5,000
28 (2047)	\$5,000

The Admin Kitchen is located on the first floor and receives moderate use. Equipment includes a 30" gas range, vent hood, microwave, dishwasher, and refrigerator. It is unlikely that all of the equipment will need to be replaced at once, so we budget a repair contingency to periodically replace equipment as needed.

**Stn.51 11.4.2 Duty Crew Kitchen Equipment - Contingency****Maintenance Cycle:** 5 years**Next Maintenance:** Year 5 (2024)**Quantity:** 1 Lump Sum**Unit Cost:** \$15,000.00 / LS**Estimate:** \$15,000

Future Maintenance	
Year	Cost
5 (2024)	\$15,000
10 (2029)	\$15,000
15 (2034)	\$15,000
20 (2039)	\$15,000
25 (2044)	\$15,000
30 (2049)	\$15,000

The Duty Crew Kitchen is located on the second floor and is heavily used. Equipment includes a 60" Wolf gas range with six burners, 66" vent hood with a 1500 CFM hood ventilator, Kitchenaid counter top microwave, Bosch undercounter dishwasher, and four Kitchenaid stainless steel refrigerators. It is unlikely that all of the equipment will need to be replaced at once, so we budget a repair contingency to periodically replace equipment as needed. Since the Duty Crew Kitchen is larger and used more frequently, the budget is larger and the maintenance cycle is more frequent than the Admin Kitchen's budget.

Stn.51 11.6.1 Laundry Equipment - Contingency**Maintenance Cycle:** 5 years**Next Maintenance:** Year 5 (2024)**Quantity:** 4 Each**Unit Cost:** \$850.00 / EA**Estimate:** 4 EA X 100% X \$850.00/EA = \$3,400 + tax = \$3,740

Future Maintenance	
Year	Cost
5 (2024)	\$3,740
10 (2029)	\$3,740
15 (2034)	\$3,740
20 (2039)	\$3,740
25 (2044)	\$3,740
30 (2049)	\$3,740

The Duty Crew Laundry room has a Whirlpool Front Load Washer & Dryer and a Maytag Front Load washer & dryer which reportedly are constantly used. We have provided a frequent replacement cycle based on the number of loads, rather than the number of years in service. All machines were operational at the time of our site visit.

**Stn.51 11.6.2 Unimac Gear Extractor - Replace****Maintenance Cycle:** 12 years**Next Maintenance:** Year 3 (2022)**Quantity:** 1 Each**Unit Cost:** \$8,000.00 / EA**Estimate:** 1 EA X 100% X \$8,000.00/EA = \$8,000 + tax = \$8,800

Future Maintenance	
Year	Cost
3 (2022)	\$8,800
15 (2034)	\$8,800
27 (2046)	\$8,800

The Unimac commercial washer is located near the Apparatus Bay to wash gear and reportedly receives constant use. We budget for periodic replacement or major repairs of the unit, which was functioning well at the time of our site visit.

Stn.51 11.6.3 Ramair Gear Dryer - Replace**Maintenance Cycle:** 12 years**Next Maintenance:** Year 3 (2022)**Quantity:** 1 Each**Unit Cost:** \$10,000.00 / EA**Estimate:** 1 EA X 100% X \$10,000.00/EA = \$10,000 + tax = \$11,000

Future Maintenance	
Year	Cost
3 (2022)	\$11,000
15 (2034)	\$11,000
27 (2046)	\$11,000

A heavy duty gear dryer is located near the Apparatus Bay. We understand that it was in good working order. We budget for periodic replacement of the unit which receives consistent use.

**Stn.51 11.8.1 Air Compressor System - Replace****Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 1 Each**Unit Cost:** \$8,000.00 / EA**Estimate:** 1 EA X 100% X \$8,000.00/EA = \$8,000 + tax = \$8,800

Future Maintenance	
Year	Cost
6 (2025)	\$8,800
21 (2040)	\$8,800

An industrial air compressor system is utilized to maintain the fire equipment. We understand that it was functioning as expected. The budget provides funds for replacement at the end of its typical useful life.

Stn.51 12.1.1 Apparatus Bay - Refurbish**Maintenance Cycle:** 25 years**Next Maintenance:** Year 16 (2035)**Quantity:** 12,525 Square Feet**Unit Cost:** \$5.00 / SF**Estimate:** 12,525 SF X 100% X \$5.00/SF = \$62,625 + tax = \$68,890

Future Maintenance	
Year	Cost
16 (2035)	\$68,890

This component budgets funds to refurbish the approximately 7,380 sf Apparatus Bay and adjoining Comp Room, Disaster Storage, Equip Decon, Hose/Equip Stor, SCBA Maint, and Shop. Funds will most likely be focused on replacing ceiling tiles, updating the FRP wall panels, and resealing concrete flooring. This component is discretionary and should be updated in terms of timing and budget to meet the needs of the Station.

**Stn.51 12.1.2 Admin Common Areas - Repaint****Maintenance Cycle:** 16 years**Next Maintenance:** Year 7 (2026)**Quantity:** 12,115 Square Feet**Unit Cost:** \$1.30 / SF**Estimate:** 12,115 SF X 100% X \$1.30/SF = \$15,750 + tax = \$17,320

Future Maintenance	
Year	Cost
7 (2026)	\$17,320
23 (2042)	\$17,320

For the sake of the report, we refer to common areas on the first level as the EMS Exam & Storage, Hallways, Admin Kitchen, Storage, and Stairways since these areas will most likely be painted at the same time. The paint was in good overall condition.

Stn.51 12.1.3 Exercise Room - Refurbish**Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 1 Lump Sum**Unit Cost:** \$3,000.00 / LS**Estimate:** \$3,000

Future Maintenance	
Year	Cost
11 (2030)	\$3,000

This budget provides funds to periodically refurbish the exercise room finishes, including painting, mirrors, television monitors and rubberized flooring. We understand that equipment is maintained and purchased with funds from the maintenance budget. The 1300 sf room was clean and in good condition at the time of our site visit.

**Stn.51 12.1.4 Bunk Gear Storage - Refurbish****Maintenance Cycle:** 10 years**Next Maintenance:** Year 5 (2024)**Quantity:** 1 Lump Sum**Unit Cost:** \$8,000.00 / LS**Estimate:** \$8,000

Future Maintenance	
Year	Cost
5 (2024)	\$8,000
15 (2034)	\$8,000
25 (2044)	\$8,000

The Bunk Gear Storage room is just off the Apparatus Bay and receives frequent traffic, but is well maintained. This component budgets funds to update finishes, storage furnishings, and to update the configuration of the 645 sf Bunk Gear Storage and Dry Closet area as needed.

Stn.51 12.1.5 Admin Offices - Refurbish**Maintenance Cycle:** 16 years**Next Maintenance:** Year 7 (2026)**Quantity:** 1 Lump Sum**Unit Cost:** \$25,000.00 / LS**Estimate:** \$25,000

Future Maintenance	
Year	Cost
7 (2026)	\$25,000
23 (2042)	\$25,000

For the purposes of this report, the 10,330 sf of administrative spaces on the first floor are referred to as the Admin Offices, including the Comp Systems, Conference Room, FP Conference, FP Workroom, 9 Offices, Reception, Records, Uniform Storage and the Workroom. This component budgets funds for repainting the trim and walls and for updating the furnishings.

**Stn.51 12.1.6 Lobby - Refurbish**

Maintenance Cycle: 15 years
Quantity: 1 Lump Sum
Estimate: \$20,000

Next Maintenance: Year 8 (2027)
Unit Cost: \$20,000.00 / LS



Future Maintenance	
Year	Cost
8 (2027)	\$20,000
23 (2042)	\$20,000

This component budgets funds for updating finishes and furnishings in the Lobby, including the adjacent hallways and Vending Room, a total of approximately 3,595 sf. Funds are for refinishing the interior wood surfaces, updating the reception millwork facing the Lobby, painting the walls, as well as updating the art and furniture.

Stn.51 12.1.7 Public Meeting Room - Refurbish

Maintenance Cycle: 12 years
Quantity: 1 Lump Sum
Estimate: \$15,000

Next Maintenance: Year 3 (2022)
Unit Cost: \$15,000.00 / LS



Future Maintenance	
Year	Cost
3 (2022)	\$15,000
15 (2034)	\$15,000
27 (2046)	\$15,000

A large public meeting room includes room partitioning doors which allows the space to be divided into two. This component budgets funds for periodic updates to the kitchenettes, paint and furniture. Also included is maintenance to the partition doors, which we do not anticipate will need to be replaced in the next 30 years. The funds are not specifically allocated so that they may be applied to the greatest need. The room was in serviceable condition, though we understand that there have been some issues with furniture in the recent past. Updating the AV equipment is funded in a separate component, are the flooring updates.

**Stn.51 12.1.8 Public & Admin Restrooms - Refurbish****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 7 Each**Unit Cost:** \$2,500.00 / EA**Estimate:** 7 EA X 100% X \$2,500.00/EA = \$17,500 + tax = \$19,250

Future Maintenance	
Year	Cost
11 (2030)	\$19,250

The public and administrative restrooms are located on the first floor and receive moderate use. The restrooms were clean and well maintained. This budget provides funds for replacing fixtures, updating finishes and making major repairs. The flooring updates are budgeted in a separate component.

Stn.51 12.2.1 Duty Crew Common Areas - Full Repaint**Maintenance Cycle:** 16 years**Next Maintenance:** Year 9 (2028)**Quantity:** 9,630 Square Feet**Unit Cost:** \$1.30 / SF**Estimate:** 9,630 SF X 100% X \$1.30/SF = \$12,519 + tax = \$13,770

Future Maintenance	
Year	Cost
9 (2028)	\$13,770
25 (2044)	\$13,770

The common areas on the second floor include the hallways, Storage, Workroom, Stair and Quiet Area. All areas were in good condition overall. This component budgets for full repainting of these areas.



Stn.51 12.2.2 Duty Crew Common Areas - Touchup Paint

Maintenance Cycle: 16 years

Quantity: 9,630 Square Feet

Estimate: 9,630 SF X 100% X \$1.30/SF = \$12,519 + tax = \$13,770

Next Maintenance: Year 17 (2036)

Unit Cost: \$1.30 / SF



Future Maintenance	
Year	Cost
17 (2036)	\$13,770

The common areas on the second floor include the hallways, Storage, Workroom, Stair and Quiet Area. All areas were in good condition overall. Due to the heavy use in the Duty Crew areas, this component provides funds for touch up painting in these areas.

Stn.51 12.2.3 Duty Crew Sleep Room Interiors - Refurbish

Maintenance Cycle: 10 years

Quantity: 9 Each

Estimate: 9 EA X 100% X \$2,500.00/EA = \$22,500 + tax = \$24,750

Next Maintenance: Year 5 (2024)

Unit Cost: \$2,500.00 / EA



Future Maintenance	
Year	Cost
5 (2024)	\$24,750
15 (2034)	\$24,750
25 (2044)	\$24,750

Nine sleep rooms are available for the Duty Crews' use. The rooms are simply furnished and were in good condition overall. This component budgets funds to repaint the walls and update the furnishings. The flooring replacement is budgeted in a separate component.

**Stn.51 12.2.4 Duty Crew Kitchen Interiors - Refurbish****Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 1 Lump Sum**Unit Cost:** \$10,000.00 / LS**Estimate:** \$10,000

Future Maintenance	
Year	Cost
1 (2020)	\$10,000
11 (2030)	\$10,000
21 (2040)	\$10,000

This component provides funds to periodically update the walls, furniture, counters and cabinets in the Duty Crew kitchen, which we understand gets heavy use. The 980 sf area was clean and well maintained. Replacement of kitchen equipment is budgeted in a separate component.

Stn.51 12.2.5 Duty Crew Laundry Interiors - Refurbish**Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 1 Lump Sum**Unit Cost:** \$2,000.00 / LS**Estimate:** \$2,000

Future Maintenance	
Year	Cost
1 (2020)	\$2,000
11 (2030)	\$2,000
21 (2040)	\$2,000

A 345 sf laundry area is available on the second floor in the Duty Crew area. The budget is intended for replacing utility sinks, counters and cabinets, as well as painting wall surfaces. A separate component budgets funds for replacing the washing and drying equipment.

**Stn.51 12.2.6 Duty Crew Office/Training Areas - Refurbish****Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 1 Lump Sum**Unit Cost:** \$6,000.00 / LS**Estimate:** \$6,000

Future Maintenance	
Year	Cost
6 (2025)	\$6,000
21 (2040)	\$6,000

The second floor has Duty Crew office and training area which will need periodic refurbishment of the wall paint and furniture. The areas are about 2,620 sf total.

Stn.51 12.2.7 Duty Crew Restrooms - Refurbish**Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 6 Each**Unit Cost:** \$2,500.00 / EA**Estimate:** 6 EA X 100% X \$2,500.00/EA = \$15,000 + tax = \$16,500

Future Maintenance	
Year	Cost
1 (2020)	\$16,500
11 (2030)	\$16,500
21 (2040)	\$16,500

The second floor has two single occupant restrooms and a four stall shower/toilet adjacent to a double sink Lavatory Area. Similar to the first floor, the restrooms were found to be clean and well maintained. This budget provides funds for replacing fixtures, updating finishes and making major repairs. The flooring updates are budgeted in a separate component.



Stn.51 12.4.1 1st Floor Interior Carpet Flooring - Replace

Maintenance Cycle: 24 years

Next Maintenance: Year 15 (2034)

Quantity:

Unit Cost: \$44.00 / SY

Estimate: 704 Square Yards

$704 \text{ SY} \times 100\% \times \$44.00/\text{SY} = \$30,981 + \text{tax} = \$34,080$



Future Maintenance	
Year	Cost
15 (2034)	\$34,080

There are twenty four rooms with carpet on the first floor of Station 51. We budget for replacement of the carpeting on a less frequent cycle than the Duty Crew areas due to less wear and tear these areas experience. Timing of the next replacement should be adjusted to meet the needs of the Station and tolerance to wear.

Stn.51 12.4.2 2nd Floor Interior Carpet Flooring - Replace

Maintenance Cycle: 16 years

Next Maintenance: Year 7 (2026)

Quantity: 507 Square Yards

Unit Cost: \$44.00 / SY

Estimate: 507 SY X 100% X \$44.00/SY = \$22,313 + tax = \$24,540



Future Maintenance	
Year	Cost
7 (2026)	\$24,540
23 (2042)	\$24,540

A total of nineteen rooms have carpet on the 2nd floor, including hallways, workrooms, the classroom, sleep rooms and support areas. We budget to replace all of the carpet at once on the second floor for continuity of appearance.

**Stn.51 12.4.3 1st Floor Resilient Flooring - Replace****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 655 Square Feet**Unit Cost:** \$3.20 / SF**Estimate:** 655 SF X 100% X \$3.20/SF = \$2,096 + tax = \$2,310

Future Maintenance	
Year	Cost
11 (2030)	\$2,310

The restrooms closest to the Public Meeting room have resilient flooring. The flooring was wearing well; this component budgets funds for replacing the flooring at the end of its typical useful life.

Stn.51 12.4.4 2nd Floor Resilient Flooring - Replace**Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 770 Square Feet**Unit Cost:** \$3.20 / SF**Estimate:** 770 SF X 100% X \$3.20/SF = \$2,464 + tax = \$2,710

Future Maintenance	
Year	Cost
6 (2025)	\$2,710
21 (2040)	\$2,710

The restrooms, shower area and laundry room on the second floor have resilient flooring. We have budgeted for replacement on a shorter maintenance cycle than the restrooms on the first floor due to the higher use in the Duty Crew areas. The flooring in these areas appeared to be regularly maintained, with no issues reported.

**Stn.51 12.4.5 1st Floor Sheet Flooring - Replace****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 1,950 Square Feet**Unit Cost:** \$15.00 / SF**Estimate:** 1,950 SF X 100% X \$15.00/SF = \$29,250 + tax = \$32,180

Future Maintenance	
Year	Cost
11 (2030)	\$32,180

Welded seam rubber sheet flooring was specified in eleven rooms on the first level, including the EMS Exam room, workroom and support areas. Rubber treads are located on the stairwell treads. This component budgets funds for periodic replacement of these surfaces, which were in good condition.

Stn.51 12.4.6 2nd Floor Sheet Flooring - Replace**Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 2,510 Square Feet**Unit Cost:** \$15.00 / SF**Estimate:** 2,510 SF X 100% X \$15.00/SF = \$37,650 + tax = \$41,420

Future Maintenance	
Year	Cost
6 (2025)	\$41,420
21 (2040)	\$41,420

Welded seam rubber sheet flooring was specified in eight rooms on the second level, including the Kitchen, hallways, and support areas. Rubber treads are located on the stairwell treads. This component budgets funds for periodic replacement of these surfaces more frequently than areas with the same type of flooring on the first floor because they are more heavily trafficked. The areas observed appeared to be regularly maintained.

Stn.51 12.4.7 1st Floor Stained Concrete - Refurbish

Maintenance Cycle: 12 years

Next Maintenance: Year 3 (2022)

Quantity: 510 Square Feet

Unit Cost: \$27.00 / SF

Estimate: 510 SF X 100% X \$27.00/SF = \$13,770 + tax = \$15,150



Future Maintenance	
Year	Cost
3 (2022)	\$15,150
15 (2034)	\$15,150
27 (2046)	\$15,150

Stained concrete surfaces are located in the Lobby, some hallways and in front of the kitchenettes in the Public Meeting Room. This component provides funds to refurbish the flooring surface to keep these high use areas in optimal condition. They were wearing well, with no issues reported.

Stn.51 12.6.1 Elevator Cab Interior - Remodel

Maintenance Cycle: 40 years

Next Maintenance: Year 31 (2050)

Quantity: 1 Lump Sum

Unit Cost: \$6,000.00 / LS

Estimate: \$6,000



Future Maintenance	
Year	Cost

Remodeling the elevator cab is reportedly a low priority for the Station. We budget funds for updating the cab interiors in conjunction with major elevator maintenance. The finishes inside the cab are wearing well.

Stn.51 14.1.1 Elevator - Major Upgrades

Maintenance Cycle: 40 years

Quantity: 1 Lump Sum

Estimate: \$125,000

Next Maintenance: Year 31 (2050)

Unit Cost: \$125,000.00 / LS

[illegible]

The elevator is on a full service contract that keeps it operational at all times. The allowance is intended to cover the cost of major repairs and replacements not covered under a typical full service contract, such as control replacement, pump replacement and hydraulic cylinder replacement. During our visit the elevator's mechanical equipment was in proper working order with no problems being noted. We recommend that the Station discuss future maintenance needs with the elevator service provider to better understand the timing and cost of future major maintenance that is outside the regular maintenance contract.

Stn.51 14.1.2 Elevators - 5 Year Load Test

Maintenance Cycle: 5 years

Quantity: 1 Lump Sum

Estimate: 1 LS X 100% X \$5,000.00/LS = \$5,000 + tax = \$5,500

Next Maintenance: Year 5 (2024)

Unit Cost: \$5,000.00 / LS



Future Maintenance	
Year	Cost
5 (2024)	\$5,500
10 (2029)	\$5,500
15 (2034)	\$5,500
20 (2039)	\$5,500
25 (2044)	\$5,500
30 (2049)	\$5,500

This component budgets for the Five-Year Safety Test for elevators mandated by the Washington State Department of Labor and Industries. The test evaluates the overspeed rupture valve and the plunger gripper per code requirements. This test is not typically covered under maintenance contracts and has an average cost of about \$5,000 per elevator cab to complete.

Stn.51 15.2.1 Plumbing System - Contingency

Maintenance Cycle: 5 years

Quantity: 1 Lump Sum

Estimate: \$5,000

Next Maintenance: Year 5 (2024)

Unit Cost: \$5,000.00 / LS



Future Maintenance	
Year	Cost
5 (2024)	\$5,000
10 (2029)	\$5,000
15 (2034)	\$5,000
20 (2039)	\$5,000
25 (2044)	\$5,000
30 (2049)	\$5,000

The supply plumbing is copper; its useful life should exceed the scope of this report. The Station has experienced some issues with pin hole leaks, which is not uncommon with copper plumbing. We carry a contingency to deal with periodic plumbing supply and drain line issues as they arise.

Stn.51 15.2.2 Plumbing Supply Lines - Replace

Maintenance Cycle: 60 years

Quantity: 1 Lump Sum

Estimate: \$60,000

Next Maintenance: Year 51 (2070)

Unit Cost: \$60,000.00 / LS

[illegible]

It was reported that some pin hole leaks have been experienced by the Station since construction was completed in 2011. It is our understanding that the quality of contemporary copper supply lines is not as high as that of copper used in the past. In addition, the circulating hot water system could promote a shorter useful life of the supply system. Therefore, a budget to replace the supply lines with PEX, or its equivalent, is budgeted once the system has been in service for 60 years. The cost will vary greatly on what supply lines are used at the time of replacement, accessibility to the lines, etc. This component is intended to help financially prepare the Station for the future expense, with the intention that the pricing will be refined as replacement is in a 5 - 10 year frame.

**Stn.51 15.3.1 Irrigation System - Contingency****Maintenance Cycle:** 10 years**Next Maintenance:** Year 10 (2029)**Quantity:** 12 Zones**Unit Cost:** \$780.00 / ZN**Estimate:** 12 ZN X 100% X \$780.00/ZN = \$9,360 + tax = \$10,300

Future Maintenance	
Year	Cost
10 (2029)	\$10,300
20 (2039)	\$10,300
30 (2049)	\$10,300

There are approximately twelve zones associated with the drip system. In 2019 one controller was replaced. This component allocates funds for major maintenance of the irrigation system, beyond what is handled by the landscaping maintenance crew and/or from funds from the operating budget, such as selective repairs to sections of plumbing, replacing controllers or timers. The estimated costs would not be sufficient to replace the entire system.

Stn.51 15.3.2 Storm Water System - Contingency**Maintenance Cycle:** 3 years**Next Maintenance:** Year 3 (2022)**Quantity:** 1 Lump Sum**Unit Cost:** \$5,000.00 / LS**Estimate:** \$5,000

Future Maintenance	
Year	Cost
3 (2022)	\$5,000
6 (2025)	\$5,000
9 (2028)	\$5,000
12 (2031)	\$5,000
15 (2034)	\$5,000
18 (2037)	\$5,000
21 (2040)	\$5,000
24 (2043)	\$5,000
Repeat Every 3 Years	

It was reported that there are nine organic filters that need periodic replacement. This budget covers the cost to replace the filters and complete other maintenance to the stormwater system, including making modifications to site drainage and upkeep of the detention vault located under the concrete parking area, as needed.

**Stn.51 15.4.1 Fire Detection System - Maintenance****Maintenance Cycle:** 5 years**Quantity:** 1 Lump Sum**Estimate:** \$2,500**Next Maintenance:** Year 5 (2024)**Unit Cost:** \$2,500.00 / LS

Future Maintenance	
Year	Cost
5 (2024)	\$2,500
10 (2029)	\$2,500
15 (2034)	\$2,500
20 (2039)	\$2,500
25 (2044)	\$2,500
30 (2049)	\$2,500

The fire detection system repair allowance is intended to financially prepare the Station to maintain the fire detection and related systems, including smoke and CO sensors, alarms, exit signage and emergency egress fixtures.

Stn.51 15.4.2 Fire Sprinkler System - Maintenance**Maintenance Cycle:** 15 years**Quantity:** 1 Lump Sum**Estimate:** \$8,000**Next Maintenance:** Year 6 (2025)**Unit Cost:** \$8,000.00 / LS

Future Maintenance	
Year	Cost
6 (2025)	\$8,000
21 (2040)	\$8,000

The building has a wet sprinkler system throughout the occupied building. The system will occasionally need piping and sprinkler head repairs. This component provides a maintenance contingency for such repairs, though no issues were reported at the time of our site visit.

**Stn.51 15.5.1 Water Heater - Contingency****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 2 Each**Unit Cost:** \$7,400.00 / EA**Estimate:** 2 EA X 100% X \$7,400.00/EA = \$14,800 + tax = \$16,280

Future Maintenance	
Year	Cost
11 (2030)	\$16,280

The Station has two Phoenix 80 gallon direct vent ultra-high efficiency gas hot water heaters on a circulating water system to provide hot water on demand. We anticipate that necessary repairs to the circulating pumps will be infrequent and inexpensive enough to handle through the operating budget. It was reported that the circulating pumps were replaced in 2019. This component provides funds for periodic replacement of the hot water heaters and associated expansion tanks.

Stn.51 15.6.1 Heat Recovery Unit - Replace**Maintenance Cycle:** 25 years**Next Maintenance:** Year 16 (2035)**Quantity:** 1 Each**Unit Cost:** \$12,000.00 / EA**Estimate:** 1 EA X 100% X \$12,000.00/EA = \$12,000 + tax = \$13,200

Future Maintenance	
Year	Cost
16 (2035)	\$13,200

A gas Aeon Bunker Gear heat recovery rooftop unit was specified for Station 51. Since the unit is located on the rooftop, replacement of the unit will require extra effort, with the possibility that a crane may be necessary to remove and replace the equipment. We budget for total replacement of the unit at the end of its typical useful life, when major repairs are no longer feasible.

**Stn.51 15.6.2 Indirect Makeup AHU - Replace****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 1 Each**Unit Cost:** \$9,000.00 / EA**Estimate:** 1 EA X 100% X \$9,000.00/EA = \$9,000 + tax = \$9,900

Future Maintenance	
Year	Cost
11 (2030)	\$9,900

Aaon RN-016 indirect makeup air handling unit is located in the rooftop HVAC well. Since the unit is located on the rooftop, replacement of the unit will require extra effort, with the possibility that a crane may be necessary to remove and replace the equipment. We budget for total replacement of the unit at the end of its typical useful life, when major repairs are no longer feasible.

Stn.51 15.6.3 Furnace - Replace**Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 1 Each**Unit Cost:** \$2,000.00 / EA**Estimate:** 1 EA X 100% X \$2,000.00/EA = \$2,000 + tax = \$2,200

Future Maintenance	
Year	Cost
11 (2030)	\$2,200

A Reznor SDH-100 furnace was specified for the Station. The system was operational at the time of our visit. We budget for major repairs or replacement of the system at the end of its anticipated useful life.

**Stn.51 15.6.4 VRF Heat Pump - Contingency****Maintenance Cycle:** 6 years**Next Maintenance:** Year 6 (2025)**Quantity:** 40 Each**Unit Cost:** \$1,331.20 / EA**Estimate:** 40 EA X 33% X \$1,331.20/EA = \$17,572 + tax = \$19,330

Future Maintenance	
Year	Cost
6 (2025)	\$19,330
12 (2031)	\$19,330
18 (2037)	\$19,330
24 (2043)	\$19,330
30 (2049)	\$19,330

A Mitsubishi VRF heat pump split system with 35 interior units and five exterior units was specified for the Station. It was reported that the system has not been functioning as expected, though a solution was not known at the time of the report. Three motherboards have been replaced; approximately \$3,500 has been spent in 2019 on miscellaneous repairs. This component budgets funds to replace up to 33% of the units each maintenance cycle since it is unlikely that all of the units will be replaced at once.

Stn.51 15.6.5 HVAC System - Contingency**Maintenance Cycle:** 5 years**Next Maintenance:** Year 5 (2024)**Quantity:** 1 Lump Sum**Unit Cost:** \$5,000.00 / LS**Estimate:** \$5,000

Future Maintenance	
Year	Cost
5 (2024)	\$5,000
10 (2029)	\$5,000
15 (2034)	\$5,000
20 (2039)	\$5,000
25 (2044)	\$5,000
30 (2049)	\$5,000

This component provides a contingency for HVAC components not specifically listed, such as the Markel H3483 ceiling electric heater, five branch circuit controllers, eight electric duct heaters, and two Markle P-125 Radiant ceiling heat panels in the EMS storage room that were specified for the Station. It was reported that the HVAC system has not been performing as expected, and that two blowers were replaced in 2019 at a cost of \$1,200.

**Stn.51 15.6.6 Infrared Heaters - Replace****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 6 Each**Unit Cost:** \$2,300.00 / EA**Estimate:** 6 EA X 100% X \$2,300.00/EA = \$13,800 + tax = \$15,180

Future Maintenance	
Year	Cost
11 (2030)	\$15,180

There are six Roberts Gordon Vantage II infrared heaters in the Apparatus Bay. No issues were reported; the budget provides funds for total replacement at the end of their typical useful life.

Stn.51 15.7.1 Exhaust Fans - Contingency**Maintenance Cycle:** 5 years**Next Maintenance:** Year 5 (2024)**Quantity:** 14 Each**Unit Cost:** \$1,500.00 / EA**Estimate:** 14 EA X 33% X \$1,500.00/EA = \$6,930 + tax = \$7,620

Future Maintenance	
Year	Cost
5 (2024)	\$7,620
10 (2029)	\$7,620
15 (2034)	\$7,620
20 (2039)	\$7,620
25 (2044)	\$7,620
30 (2049)	\$7,620

There are thirteen exhaust fans located throughout Station 51 and a specialized exhaust removal system is in the Apparatus Bay. This budget establishes a repair contingency to ensure that the system has funding to keep it in optimal condition. The budget reflects anticipated costs to repair up to 33% of the system each maintenance cycle, including vent hoods on the exterior of the building. Typically, exhaust systems are maintained, rather than removed and replaced within a 30 year timeframe.

**Stn.51 16.3.1 Electrical System - Contingency****Maintenance Cycle:** 10 years**Quantity:** 1 Lump Sum**Estimate:** \$5,000**Next Maintenance:** Year 10 (2029)**Unit Cost:** \$5,000.00 / LS

Future Maintenance	
Year	Cost
10 (2029)	\$5,000
20 (2039)	\$5,000
30 (2049)	\$5,000

Once the electrical system has been in service 20 years we typically recommend an electrical preventative maintenance inspection and service on all panels every three years. This component provides a contingency to address future preventative maintenance inspections, and any other electrical system issue that may arise. The electrical meter bases are housed on the interior of the building, so we do not anticipate that they will need to be replaced in the next 30 years.

Stn.51 16.5.1 Emergency Generator - Replace**Maintenance Cycle:** 30 years**Quantity:** 1 Each**Estimate:** 1 EA X 100% X \$18,000.00/EA = \$18,000 + tax = \$19,800**Next Maintenance:** Year 21 (2040)**Unit Cost:** \$18,000.00 / EA

Future Maintenance	
Year	Cost
21 (2040)	\$19,800

A Detroit diesel generator with a 1,000 gallon fuel tank provides the Station with power in the event of a power failure. The system is reportedly tested regularly and has engaged during power outages in the past. Since the generator provides power to a critical emergency service, we budget for replacement once the generator has been in service 30 years. The system may remain serviceable longer with regular maintenance and intermittent use.

**Stn.51 16.5.2 Generator Fuel Tank - Replace****Maintenance Cycle:** 30 years**Next Maintenance:** Year 21 (2040)**Quantity:** 1 Each**Unit Cost:** \$8,000.00 / EA**Estimate:** 1 EA X 100% X \$8,000.00/EA = \$8,000 + tax = \$8,800

Future Maintenance	
Year	Cost
21 (2040)	\$8,800

The fuel tank for the generator is located in the elements and will periodically need to be replaced. Since it is a critical component of the emergency generator system, we have budgeted for its replacement when it has been in service 30 years.

Stn.51 16.6.1 Exterior Light Fixtures - Replace**Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 1 Lump Sum**Unit Cost:** \$10,000.00 / LS**Estimate:** \$10,000

Future Maintenance	
Year	Cost
1 (2020)	\$10,000
11 (2030)	\$10,000
21 (2040)	\$10,000

There are a variety of exterior light fixtures associated with Station 51, including light bollards, stair lighting (which we understand is not currently functioning), building mounted fixtures and pole mounted fixtures in the parking area. It was reported that some of the lamps needed for some of the building mounted fixtures are no longer available; these fixtures will need to be replaced within the next year or so. Since all of the fixtures will not be replaced at once, we budget a lump sum each repair cycle to address the lighting fixtures that need to be updated or replaced. There are approximately 40 exterior light fixtures total.

**Stn.51 16.8.1 Fire Control Panel - Replace****Maintenance Cycle:** 20 years**Next Maintenance:** Year 11 (2030)**Quantity:** 1 Each**Unit Cost:** \$3,400.00 / EA**Estimate:** 1 EA X 100% X \$3,400.00/EA = \$3,400 + tax = \$3,740

Future Maintenance	
Year	Cost
11 (2030)	\$3,740

The Station has one EST fire alarm control panel that is regularly inspected. We do not anticipate that any major maintenance will be required. The budget is for replacement of the panel at the end of its useful life.

Stn.51 16.9.1 Audio/Visual Equipment - Upgrades**Maintenance Cycle:** 15 years**Next Maintenance:** Year 6 (2025)**Quantity:** 1 Lump Sum**Unit Cost:** \$77,000.00 / LS**Estimate:** \$77,000

Future Maintenance	
Year	Cost
6 (2025)	\$77,000
21 (2040)	\$77,000

An estimate was provided for upgrades to the current system, which is not up to current standards. The bid includes costs for "Head End" equipment at \$42,641.37 and projection system replacement at \$18,329.07, with an additional \$16,000 needed to upgrade the upstairs training room. We understand that this work will likely be completed by the end of 2020.

**Stn.51 17.1.1 Fireblast 451 - Maintenance****Maintenance Cycle:** 10 years**Quantity:** 1 Lump Sum**Estimate:** \$10,000**Next Maintenance:** Year 1 (2020)**Unit Cost:** \$10,000.00 / LS

Future Maintenance	
Year	Cost
1 (2020)	\$10,000
11 (2030)	\$10,000
21 (2040)	\$10,000

The Tower has a computerized live fire burn prop that utilizes a propane tank for training drills. This component provides funds for major repairs and periodic upgrades as needed.

Stn.51 18.1.1 Security / Surveillance System - Replace**Maintenance Cycle:** 10 years**Quantity:** 1 Lump Sum**Estimate:** \$16,000**Next Maintenance:** Year 1 (2020)**Unit Cost:** \$16,000.00 / LS

Future Maintenance	
Year	Cost
1 (2020)	\$16,000
11 (2030)	\$16,000
21 (2040)	\$16,000

This year or next there are plans to install one additional keypad and 7 cameras, as well as upgrades to the software and hardware. There are currently six keypads on site. We maintain a budget for future upgrades to the system as components wear out and/or become obsolete.

Stn.57 2.6.1 Asphalt Paving - Repair

Maintenance Cycle: 6 years

Next Maintenance: Year 1 (2019)

Quantity: 9,180 Square Feet

Unit Cost: \$8.00 / SF

Estimate: 9,180 SF X 5% X \$8.00/SF = \$3,672 + tax = \$4,040



Future Maintenance	
Year	Cost
1 (2020)	\$4,040
7 (2026)	\$4,040
13 (2032)	\$4,040
19 (2038)	\$4,040
25 (2044)	\$4,040

The asphalt pavement of the parking areas and driveway appeared to be in good condition overall, with no broken or sunken areas of asphalt noted. The asphalt walkway along Brookside Blvd NE seemed even with no visible root intrusion damage causing trip hazards. The budget provides funds to repair up to 5% of the total asphalt pavement. Considering the current condition of the asphalt pavement we do not include a budget for asphalt overlay.

Stn.57 2.6.2 Asphalt Pavement- Seal Coat & Restripe

Maintenance Cycle: 6 years

Next Maintenance: Year 1 (2020)

Quantity: 9,180 Square Feet

Unit Cost: \$0.50 / SF

Estimate: 9,180 SF X 100% X \$0.50/SF = \$4,590 + tax = \$5,050



Future Maintenance	
Year	Cost
1 (2020)	\$5,050
7 (2026)	\$5,050
13 (2032)	\$5,050
19 (2038)	\$5,050
25 (2044)	\$5,050

Last seal coated and restriped in 2012, the seal coat seemed to be performing well and the striping was clearly visible. We recommend that the Station regularly repair and seal coat the asphalt to help prevent water intrusion, which could degrade the subgrade. Over a period of time water intrusion can lead to "alligatoring" and delamination of the asphalt surface. The budget provides funds to seal coat and restripe the asphalt pavement every six years in conjunction with asphalt paving repairs.

Stn.57 2.7.4 Privacy Wood Fence - Replace

Maintenance Cycle: 15 years

Next Maintenance: Year 10 (2029)

Quantity: 120 Linear Feet

Unit Cost: \$46.00 / LF

Estimate: 120 LF X 100% X \$46.00/LF = \$5,520 + tax = \$6,070



Future Maintenance	
Year	Cost
10 (2029)	\$6,070
25 (2044)	\$6,070

The privacy wood fence sits atop a concrete retaining wall located at the north side of the property. Another wood fence section creates a privacy screen around the back-patio area. Both fences appeared to be stable and in good condition. The budget maintains funds to replace the wood fence sections when they have reached the approximate end of their useful life. We do not anticipate that the concrete retaining walls will need to be replaced within the next 30 years.

Stn.57 2.7.5 Chain-link Fence - Repair

Maintenance Cycle: 40 years

Next Maintenance: Year 20 (2039)

Quantity: 205 Linear Feet

Unit Cost: \$19.00 / LF

Estimate: 205 LF X 100% X \$19.00/LF = \$3,895 + tax = \$4,280



Future Maintenance	
Year	Cost
20 (2039)	\$4,280

A vinyl coated six foot chain-link fence secures the Lyon Creek wetland area located at the northeast side of the property. The fence appeared to be stable and in good condition. The budget saves for replacing the chain-link fence when it has reached the approximate end of its useful life. Repairs should be paid with funds from the operating budget.

**Stn.57 2.9.2 Landscaping - Maintenance****Maintenance Cycle:** 8 years**Quantity:** 1 Lump Sum**Estimate:** \$5,000**Next Maintenance:** Year 8 (2027)**Unit Cost:** \$5,000.00 / LS

Future Maintenance	
Year	Cost
8 (2027)	\$5,000
16 (2035)	\$5,000
24 (2043)	\$5,000

This component provides funds for periodic large landscaping projects, such as removing and replacing overgrown plants or large tree pruning. Regular landscaping maintenance is paid for with funds from the operating budget. The budget saves a lump sum amount to be drawn from as needed.

Stn.57 2.9.3 Wetland - Maintenance**Maintenance Cycle:** 15 years**Quantity:** 1 Lump Sum**Estimate:** \$10,000**Next Maintenance:** Year 15 (2034)**Unit Cost:** \$10,000.00 / LS

Future Maintenance	
Year	Cost
15 (2034)	\$10,000
30 (2049)	\$10,000

Wetlands are protected environments that require specialized maintenance. Qualified professionals are required to inspect and repair critical structural features such as embankments, outlets, pipes and risers. Other considerations include removing accumulated sediment, removal of trash and invasive plants. This component budgets funds for periodic inspections, permits and maintenance of the wetland area adjacent to Station 57.

**Stn.57 3.3.3 Exterior Concrete Paving - Repair****Maintenance Cycle:** 6 years**Next Maintenance:** Year 4 (2023)**Quantity:** 1,730 Square Feet**Unit Cost:** \$8.40 / SF**Estimate:** 1,730 SF X 20% X \$8.40/SF = \$2,906 + tax = \$3,200

Future Maintenance	
Year	Cost
4 (2023)	\$3,200
10 (2029)	\$3,200
16 (2035)	\$3,200
22 (2041)	\$3,200
28 (2047)	\$3,200

The concrete pavement of the walkways and patio seemed to be in good condition. In 2017 concrete sections were slab jacked to remove trip hazards. We budget to repair up to 20% of the concrete walkways and curbs each repair cycle. We recommend grinding or cutting the concrete to resolve trip hazards where possible. Cracks, spalling and/or damaged areas that cannot be corrected by grinding are intended to be covered by this component.

Stn.57 6.1.2 Garbage Bin Enclosure - Contingency**Maintenance Cycle:** 20 years**Next Maintenance:** Year 20 (2039)**Quantity:** 1 Lump Sum**Unit Cost:** \$1,500.00 / LS**Estimate:** \$1,500

Future Maintenance	
Year	Cost
20 (2039)	\$1,500

The dumpster enclosure has three six-foot brick walls with a front-closing wood gate. The budget allocates funds to replace the wood gate only. Brick repairs of the dumpster walls may be addressed as needed in conjunction with the brick siding maintenance.

Stn.57 6.4.5 Brick Siding - Maintenance

Maintenance Cycle: 20 years

Next Maintenance: Year 10 (2029)

Quantity: 4,860 Square Feet

Unit Cost: \$24.00 / SF

Estimate: 4,860 SF X 10% X \$24.00/SF = \$11,664 + tax = \$12,830



Future Maintenance	
Year	Cost
10 (2029)	\$12,830
30 (2049)	\$12,830

The brick siding of the station building appeared to be in good condition, with no visible staining, efflorescence or cracking noted. The reserve allowance is intended for periodic repairs and tuck-pointing of the brick façades with a budget to address up to 10% of the maintenance each repair cycle.

Stn.57 7.3.2 Gutters & Downspouts - Replace

Maintenance Cycle: 20 years

Next Maintenance: Year 13 (2032)

Quantity: 511 Linear Feet

Unit Cost: \$5.63 / LF

Estimate: 511 LF X 100% X \$5.63/LF = \$2,877 + tax = \$3,160



Future Maintenance	
Year	Cost
13 (2032)	\$3,160

The component saves for replacing the gutters and downspouts when they have reached the approximate end of their useful life. The facility representative indicated the gutters are covered by screens.

**Stn.57 7.4.7 Metal Roof - Replace****Maintenance Cycle:** 40 years**Next Maintenance:** Year 13 (2032)**Quantity:** 70 Roofing Squares**Unit Cost:** \$780.00 / SQ**Estimate:** 70 SQ X 100% X \$780.00/SQ = \$54,600 + tax = \$60,060

Future Maintenance	
Year	Cost
13 (2032)	\$60,060

The metal roof appeared to be clean and in good condition overall. The roof is original to the building with an install date of 1992. We budget for a complete roof replacement. As the roof nears the end of its useful life the year for replacement may be adjusted according to how well the roof is performing

Stn.57 7.4.8 Roof Inspection & Minor Repair**Maintenance Cycle:** 5 years**Next Maintenance:** Year 2 (2021)**Quantity:** 70 Roofing Squares**Unit Cost:** \$780.00 / SQ**Estimate:** 70 SQ X 5% X \$780.00/SQ = \$2,730 + tax = \$3,000

Future Maintenance	
Year	Cost
2 (2021)	\$3,000
7 (2026)	\$3,000
12 (2031)	\$3,000
17 (2036)	\$3,000
22 (2041)	\$3,000
27 (2046)	\$3,000

We include a budget for regular roof inspections and repairs as needed with a budget equal to 5% of the total replacement. Due to the considerable damage potential a leaking roof can cause, we recommend regular cleanings and inspections to maintain the integrity of the weatherproof membrane, flashing and joints.

**Stn.57 8.2.8 Common Doors & Hardware - Maintenance****Maintenance Cycle:** 10 years**Next Maintenance:** Year 5 (2024)**Quantity:** 31 Each**Unit Cost:** \$650.00 / EA**Estimate:** 31 EA X 15% X \$650.00/EA = \$3,023 + tax = \$3,320

Future Maintenance	
Year	Cost
5 (2024)	\$3,320
15 (2034)	\$3,320
25 (2044)	\$3,320

Since it is unlikely that the station will need to replace all of the common doors and hardware at once, we budget a maintenance contingency to replace about four doors and hardware sets every maintenance cycle. We anticipate that the funds will be used as needed to keep the doors secure and operational at all times.

Stn.57 8.2.6 Overhead Bay Door - Replace**Maintenance Cycle:** 20 years**Next Maintenance:** Year 10 (2029)**Quantity:** 5 Each**Unit Cost:** \$1,036.36 / EA**Estimate:** 5 EA X 100% X \$1,036.36/EA = \$5,182 + tax = \$5,700

Future Maintenance	
Year	Cost
10 (2029)	\$5,700
30 (2049)	\$5,700

The Apparatus Bay is secured by five 14-foot tall sectional overhead bay doors with pane windows. The budget provides funds to replace the doors when they have reached the approximate end of their useful life. Funds may be drawn from as needed to keep the doors and associated hardware, such as springs, functional at all times.

**Stn.57 8.2.7 Bay Door Operator - Contingency****Maintenance Cycle:** 20 years**Next Maintenance:** Year 20 (2039)**Quantity:** 5 Each**Unit Cost:** \$10,000.00 / EA**Estimate:** 5 EA X 100% X \$10,000.00/EA = \$50,000 + tax = \$55,000

Future Maintenance	
Year	Cost
20 (2039)	\$55,000

The Apparatus Bay sectional overhead doors are operated by gearhead trolley-style operators. The operators were reported to be functioning properly. The budget provides funds to replace five bay door operators.

Stn.57 8.3.3 Storefront System - Maintenance**Maintenance Cycle:** 10 years**Next Maintenance:** Year 10 (2029)**Quantity:** 5 Each**Unit Cost:** \$3,500.00 / EA**Estimate:** 5 EA X 100% X \$3,500.00/EA = \$17,500 + tax = \$19,250

Future Maintenance	
Year	Cost
10 (2029)	\$19,250
20 (2039)	\$19,250
30 (2049)	\$19,250

The aluminum framed glass entry door and windows seemed to be sturdy and in good condition. No issues with functionality were reported. The budget provides funds to repair or replace sections of the system and replace door hardware as needed.

**Stn.57 8.5.2 Aluminum Framed Windows - Replace****Maintenance Cycle:** 45 years**Next Maintenance:** Year 18 (2037)**Quantity:** 1 Lump Sum**Unit Cost:** \$30,000.00 / LS**Estimate:** \$30,000

Future Maintenance	
Year	Cost
18 (2037)	\$30,000

The component provides funds for window glazing and frame replacement once the fifteen windows on the building have been in service approximately 45 years. The Station has about five windows that are over eight feet wide. We have allocated additional funds for the replacement of the oversized windows. Windows are typically replaced because they are not operating properly, to update their appearance and/or to capture better energy efficiency. We expect that failed insulated glazing units will be replaced as needed with funds from the operating budget.

Stn.57 9.8.5 Front Entry Steel Framed Structure - Paint**Maintenance Cycle:** 10 years**Next Maintenance:** Year 4 (2023)**Quantity:** 128 Linear Feet**Unit Cost:** \$16.00 / LF**Estimate:** 128 LF X 100% X \$16.00/LF = \$2,048 + tax = \$2,250

Future Maintenance	
Year	Cost
4 (2023)	\$2,250
14 (2033)	\$2,250
24 (2043)	\$2,250

The paint of the front entry steel framed structure seemed to be in good condition. The budget allows for painting the exterior metal periodically. We recommend maintaining a regular paint cycle to protect the exterior metal from moisture damage, which should help the structure achieve its expected useful life. The glazing panes at the top of the structure should be maintained with funds from the operating budget.

Stn.57 10.4.2 Exterior Signage - Refurbish

Maintenance Cycle: 15 years

Quantity: 1 Lump Sum

Estimate: \$2,500

Next Maintenance: Year 12 (2031)

Unit Cost: \$2,500.00 / LS



Future Maintenance	
Year	Cost
12 (2031)	\$2,500
27 (2046)	\$2,500

The large metal station number signage was installed in 2016. The budget provides funds to clean and repaint the numbers and lettering periodically.

Stn.57 11.4.3 Kitchen Equipment - Contingency

Maintenance Cycle: 5 years

Quantity: 5 Each

Estimate: 5 EA X 50% X \$5,000.00/EA = \$12,500 + tax = \$13,750

Next Maintenance: Year 8 (2027)

Unit Cost: \$5,000.00 / EA



Future Maintenance	
Year	Cost
8 (2027)	\$13,750
13 (2032)	\$13,750
18 (2037)	\$13,750
23 (2042)	\$13,750
28 (2047)	\$13,750

The Station kitchen equipment includes a Viking four burner gas range, an undercounter dishwasher, and three refrigerators. The budget allows for the purchase of up to two appliances every five years. The appliances were reported to be functioning properly at the time of the site visit.

**Stn.57 11.6.4 Laundry Equipment - Contingency****Maintenance Cycle:** 5 years**Next Maintenance:** Year 5 (2024)**Quantity:** 2 Each**Unit Cost:** \$1,500.00 / EA**Estimate:** 2 EA X 100% X \$1,500.00/EA = \$3,000 + tax = \$3,300

Future Maintenance	
Year	Cost
5 (2024)	\$3,300
10 (2029)	\$3,300
15 (2034)	\$3,300
20 (2039)	\$3,300
25 (2044)	\$3,300
30 (2049)	\$3,300

The Laundry Room provides a super capacity top load washer and a super capacity front load dryer. Funds are allocated to replace the washer and dryer set with a similar quality appliance each maintenance cycle.

Stn.57 11.6.5 Station Extractor - Bunker Gear Washer**Maintenance Cycle:** 12 years**Next Maintenance:** Year 7 (2026)**Quantity:** 1 Each**Unit Cost:** \$8,000.00 / EA**Estimate:** 1 EA X 100% X \$8,000.00/EA = \$8,000 + tax = \$8,800

Future Maintenance	
Year	Cost
7 (2026)	\$8,800
19 (2038)	\$8,800

A Unimac washer extractor that is responsible for cleaning the firemen's gear is located in the Shop Room next to the Apparatus Bay. After the remodel project in 2020 the shop area will be converted to a Locker Room. The budget provides funds to replace the washer extractor with a similar high-performance industrial washer extractor.

**Stn.57 11.8.2 Air Compressor - Replace****Maintenance Cycle:** 12 years**Next Maintenance:** Year 13 (2032)**Quantity:** 3,640 Square Feet**Unit Cost:** \$10.00 / SF**Estimate:** 3,640 SF X 100% X \$10.00/SF = \$36,400 + tax = \$40,040

Future Maintenance	
Year	Cost
13 (2032)	\$40,040
25 (2044)	\$40,040

The component maintains funds to replace the fire station utility air compressor. The equipment was reported as functional at the time of our site visit, with no issues noted.

Stn.57 12.3.1 Interior Concrete Floor - Refurbish**Maintenance Cycle:** 25 years**Next Maintenance:** Year 26 (2045)**Quantity:** 5,748 Square Feet**Unit Cost:** \$5.00 / SF**Estimate:** 5,748 SF X 25% X \$5.00/SF = \$7,185 + tax = \$7,900

Future Maintenance	
Year	Cost
26 (2045)	\$7,900

The Station remodel project planned for 2020 includes removing the interior flooring and replacing it with polished concrete flooring throughout the Station. This component provides funds to refurbish the concrete flooring regularly to keep the surface in optimal condition.

**Stn.57 12.3.2 Apparatus Bay - Refurbish****Maintenance Cycle:** 10 years**Next Maintenance:** Year 5 (2024)**Quantity:** 5,844 Square Feet**Unit Cost:** \$2.10 / SF**Estimate:** 5,844 SF X 100% X \$2.10/SF = \$12,272 + tax = \$13,500

Future Maintenance	
Year	Cost
5 (2024)	\$13,500
15 (2034)	\$13,500
25 (2044)	\$13,500

The bid drawings indicate the Apparatus Bay fiberglass reinforced plastic (FRP) wall panels and ceiling tiles will be replaced. This component maintains funds to refurbish the apparatus bay FRP panels, and ceiling tile 25 year after the new materials have been installed.

Stn.57 12.3.3 Hallway & Stairwell Walls & Ceiling - Paint**Maintenance Cycle:** 25 years**Next Maintenance:** Year 5 (2024)**Quantity:** 1 Lump Sum**Unit Cost:** \$7,000.00 / LS**Estimate:** \$7,000

Future Maintenance	
Year	Cost
5 (2024)	\$7,000
30 (2049)	\$7,000

The hallways and stairwell leading to the mezzanine level seem to be in good condition. These areas are not being updated during the remodel project planned for 2020. The budget provides funds to paint the walls and ceiling of the hallways and stairwell.

**Stn.57 12.3.4 Front Reception Desk & Office - Remodel****Maintenance Cycle:** 10 years**Next Maintenance:** Year 3 (2022)**Quantity:** 1 Lump Sum**Unit Cost:** \$25,000.00 / LS**Estimate:** \$25,000

Future Maintenance	
Year	Cost
3 (2022)	\$25,000
13 (2032)	\$25,000
23 (2042)	\$25,000

Remodeling the front reception desk and offices is an aesthetic consideration and may be updated at the discretion of the management to fit the needs of the Station.

Stn.57 12.3.5 Kitchen - Remodel**Maintenance Cycle:** 10 years**Next Maintenance:** Year 5 (2024)**Quantity:** 1 Lump Sum**Unit Cost:** \$10,000.00 / LS**Estimate:** \$10,000

Future Maintenance	
Year	Cost
5 (2024)	\$10,000
15 (2034)	\$10,000
25 (2044)	\$10,000

The Kitchen walls, furniture, counters and cabinets seemed to be in good condition. The kitchen area is not included in the 2020 remodel project. The budget provides funds to update the kitchen area within the next five years. This component is also a discretionary expense and may be adjusted as needed. Replacement of kitchen equipment is budgeted in a separate component.



Stn.57 12.3.6 Day / Dining Room - Remodel

Maintenance Cycle: 15 years
Quantity: 1 Lump Sum
Estimate: \$15,000

Next Maintenance: Year 5 (2024)
Unit Cost: \$15,000.00 / LS



Future Maintenance	
Year	Cost
5 (2024)	\$15,000
20 (2039)	\$15,000

The budget provides funds to update the Day Room and Dining Area. The areas appeared to be in good condition overall. The budget amount and timing may be adjusted to better fit the needs of the Station.

Stn.57 12.3.7 Duty Crew Sleep Rooms - Refurbish

Maintenance Cycle: 20 years
Quantity: 1 Lump Sum
Estimate: \$5,000

Next Maintenance: Year 10 (2029)
Unit Cost: \$5,000.00 / LS



Future Maintenance	
Year	Cost
10 (2029)	\$5,000
30 (2049)	\$5,000

We include a budget a contingency for refurbishing the six sleep rooms in the Station. Funds may be drawn from as needed to paint wall surfaces and replace furnishings.

**Stn.57 12.3.8 Exercise Room - Refurbish****Maintenance Cycle:** 15 years**Quantity:** 1 Lump Sum**Estimate:** \$30,000**Next Maintenance:** Year 16 (2035)**Unit Cost:** \$30,000.00 / LS

Future Maintenance	
Year	Cost
16 (2035)	\$30,000

The exercise room seemed to be in good condition. The lump sum budget provides funds to replace the rubberized flooring, mirrors, and paint walls. Replacing exercise equipment is funded through the operating budget.

Stn.57 12.3.9 Locker & Restroom - Refurbish**Maintenance Cycle:** 15 years**Quantity:** 1 Lump Sum**Estimate:** \$2,000**Next Maintenance:** Year 7 (2026)**Unit Cost:** \$2,000.00 / LS

Future Maintenance	
Year	Cost
7 (2026)	\$2,000
22 (2041)	\$2,000

The Station plans to remodel the restrooms and create a Locker Room in 2020. This component maintains funds to refurbish the restrooms and Locker Room fifteen years after the rooms have been in service.

**Stn.57 12.3.10 Laundry & Utility Room - Refurbish****Maintenance Cycle:** 10 years**Quantity:** 1 Lump Sum**Estimate:** \$10,000**Next Maintenance:** Year 10 (2029)**Unit Cost:** \$10,000.00 / LS

Future Maintenance	
Year	Cost
10 (2029)	\$10,000
20 (2039)	\$10,000
30 (2049)	\$10,000

The Laundry and Utility rooms appeared to be in good condition. The budget is intended for replacing utility sinks, counters and cabinets, as well as painting wall surfaces. A separate component budgets funds for replacing the washing and drying equipment.

Stn.57 15.2.3 Plumbing System - Contingency**Maintenance Cycle:** 10 years**Quantity:** 1 Lump Sum**Estimate:** \$5,000**Next Maintenance:** Year 6 (2025)**Unit Cost:** \$5,000.00 / LS

Future Maintenance	
Year	Cost
6 (2025)	\$5,000
16 (2035)	\$5,000
26 (2045)	\$5,000

The plumbing repair allowance is intended to help financially prepare the Station for any unforeseen problems with the common supply and drain plumbing lines, typically the sections running from the utility connection to the buildings. The allowance may be drawn from as needed. We have identified most supply lines to be copper with additional PEX lines.



Stn.57 15.3.3 Irrigation System - Contingency

Maintenance Cycle: 5 years
Quantity: 1 Lump Sum
Estimate: \$2,500

Next Maintenance: Year 5 (2024)
Unit Cost: \$2,500.00 / LS



Future Maintenance	
Year	Cost
5 (2024)	\$2,500
10 (2029)	\$2,500
15 (2034)	\$2,500
20 (2039)	\$2,500
25 (2044)	\$2,500
30 (2049)	\$2,500

The irrigation system was reported to be in working condition. The number of zones operating the system was unknown at the time of our site visit. The component provides a lump sum amount to repair or replace as needed sections of irrigation piping, controllers, sprinkler heads, and valves.

Stn.57 15.4.3 Fire Detection System - Maintenance

Maintenance Cycle: 15 years
Quantity: 1 Lump Sum
Estimate: \$5,000

Next Maintenance: Year 7 (2026)
Unit Cost: \$5,000.00 / LS



Future Maintenance	
Year	Cost
7 (2026)	\$5,000
22 (2041)	\$5,000

The fire detection system repair allowance is intended to financially prepare the Station to maintain the fire detection and related systems, including smoke and CO sensors, alarms, exit signage and emergency egress fixtures.

**Stn.57 15.4.4 Wet & Dry Fire Sprinkler System - Contingency****Maintenance Cycle:** 10 years**Next Maintenance:** Year 10 (2029)**Quantity:** 1 Lump Sum**Unit Cost:** \$5,000.00 / LS**Estimate:** 1 LS X 100% X \$5,000.00/LS = \$5,000 + tax = \$5,500

Future Maintenance	
Year	Cost
10 (2029)	\$5,500
20 (2039)	\$5,500
30 (2049)	\$5,500

The sprinkler system is tested regularly with no issues noted. The budget provides funds to maintain components of the wet and dry fire suppression system including replacing the compressor, piping, sensor and valves.

Stn.57 15.5.2 Water Heater - Replace**Maintenance Cycle:** 15 years**Next Maintenance:** Year 4 (2023)**Quantity:** 3 Each**Unit Cost:** \$2,400.00 / EA**Estimate:** 3 EA X 100% X \$2,400.00/EA = \$7,200 + tax = \$7,920

Future Maintenance	
Year	Cost
4 (2023)	\$7,920
19 (2038)	\$7,920

The 100 gallon water heater has an expected 10-year useful life. The budget allows for replacing the heater with a product of the same kind.

**Stn.57 15.6.7 HVAC Units - Replace****Maintenance Cycle:** 15 years**Next Maintenance:** Year 8 (2027)**Quantity:** 1 Each**Unit Cost:** \$10,000.00 / EA**Estimate:** 1 EA X 100% X \$10,000.00/EA = \$10,000 + tax = \$11,000

Future Maintenance	
Year	Cost
8 (2027)	\$11,000
23 (2042)	\$11,000

The three Lennox HVAC units located outside are original to the facility. The units were reported to be functional with no further issues noted. We allocate reserve funds for major repairs or replacement of three HVAC units.

Stn.57 15.6.8 Furnace - Replace**Maintenance Cycle:** 10 years**Next Maintenance:** Year 6 (2025)**Quantity:** 5 Each**Unit Cost:** \$2,500.00 / EA**Estimate:** 5 EA X 100% X \$2,500.00/EA = \$12,500 + tax = \$13,750

Future Maintenance	
Year	Cost
6 (2025)	\$13,750
16 (2035)	\$13,750
26 (2045)	\$13,750

The Carrier brand furnace located in the equipment room on the second floor was replaced about 5-7 years ago. The unit was reported to be functional at the time of the site visit. We budget for replacing the unit when it has reached the approximate end of its useful life.

**Stn.57 15.6.9 Infrared Overhead Heaters - Replace****Maintenance Cycle:** 10 years**Next Maintenance:** Year 10 (2029)**Quantity:** 1 Lump Sum**Unit Cost:** \$5,000.00 / LS**Estimate:** \$5,000

Future Maintenance	
Year	Cost
10 (2029)	\$5,000
20 (2039)	\$5,000
30 (2049)	\$5,000

The reserve contingency saves for replacing the five Reznor infrared overhead heaters located in the apparatus bay. No issues were noted.

Stn.57 15.7.2 Exhaust Fans - Contingency**Maintenance Cycle:** 5 years**Next Maintenance:** Year 5 (2024)**Quantity:** 8 Each**Unit Cost:** \$1,500.00 / EA**Estimate:** 8 EA X 33% X \$1,500.00/EA = \$3,960 + tax = \$4,360

Future Maintenance	
Year	Cost
5 (2024)	\$4,360
10 (2029)	\$4,360
15 (2034)	\$4,360
20 (2039)	\$4,360
25 (2044)	\$4,360
30 (2049)	\$4,360

There are exhaust fans for the kitchen and restrooms, as well as a specialized exhaust removal system is in the Apparatus Bay at Station 57. This budget establishes a repair contingency to ensure that the system has funding to keep it in optimal condition. The exact number of exhausts was not provided; we estimate that there are approximately eight for the facility. The budget reflects anticipated costs to repair up to 33% of the system each maintenance cycle, including vent hoods on the exterior of the building. Typically, exhaust systems are maintained, rather than removed and replaced within a 30 year timeframe.

**Stn.57 16.3.2 Electrical System - Contingency****Maintenance Cycle:** 20 years**Next Maintenance:** Year 10 (2029)**Quantity:** 1 Each**Unit Cost:** \$6,000.00 / EA**Estimate:** 1 EA X 100% X \$6,000.00/EA = \$6,000 + tax = \$6,600

Future Maintenance	
Year	Cost
10 (2029)	\$6,600
30 (2049)	\$6,600

We budget for preventative maintenance of the Station's interior electrical equipment. This budget is not intended to replace large scale electrical equipment. Since the electrical system is located inside the Station and is well protected from the elements, we expect the equipment to outlast the 30-year timeframe of this study.

Stn.57 16.5.3 Emergency Generator - Contingency**Maintenance Cycle:** 20 years**Next Maintenance:** Year 20 (2039)**Quantity:** 1 Each**Unit Cost:** \$8,000.00 / EA**Estimate:** 1 EA X 100% X \$8,000.00/EA = \$8,000 + tax = \$8,800

Future Maintenance	
Year	Cost
20 (2039)	\$8,800

The emergency generator is tested frequently and reported to be functional. The budget provides funds to complete major repairs as needed to keep the equipment functional at all times.

**Stn.57 16.6.2 Exterior Light Fixtures - Replace****Maintenance Cycle:** 15 years**Next Maintenance:** Year 2 (2021)**Quantity:** 5 Each**Unit Cost:** \$500.00 / EA**Estimate:** 5 EA X 100% X \$500.00/EA = \$2,500 + tax = \$2,750

Future Maintenance	
Year	Cost
2 (2021)	\$2,750
17 (2036)	\$2,750

The exterior light fixtures were reported to be functional. The timing system controlling the building security lights was not working properly and may need repair to restore the system. The budget provides funds to replace four exterior bollard light fixtures and four building security light fixtures.

Stn.57 16.8.2 Fire Control Panel - Replace**Maintenance Cycle:** 20 years**Next Maintenance:** Year 10 (2029)**Quantity:** 1 Each**Unit Cost:** \$3,500.00 / EA**Estimate:** 1 EA X 100% X \$3,500.00/EA = \$3,500 + tax = \$3,850

Future Maintenance	
Year	Cost
10 (2029)	\$3,850
30 (2049)	\$3,850

The installation date of the current fire alarm control panel is not known, so we have assumed that it is half way through its typical life cycle. No issues were reported. The budget allows for future replacement of the fire control panel.

**Stn.57 18.1.2 Security / Surveillance System - Upgrade****Maintenance Cycle:** 10 years**Next Maintenance:** Year 1 (2020)**Quantity:** 1 Lump Sum**Unit Cost:** \$15,000.00 / LS**Estimate:** \$15,000

Future Maintenance	
Year	Cost
1 (2020)	\$15,000

The Station's security system is reportedly outdated and the Department was obtaining bids at the time of our site visit to upgrade the system within the next year. The budget provides funds to upgrade the existing security system and surveillance system in 2020 in conjunction with Station 51.



FINANCIAL ANALYSIS & RESERVE CONTRIBUTION RECOMMENDATIONS

Northshore Fire Department should determine the best reserve funding level for their organization based on their maintenance needs and risk aversion.

Recommended 2020 Contribution	\$162,300
Recommended Contribution per Month	\$13,525
Average Contribution per Unit per Year	\$162,300

For budgeting purposes, we recommend that Northshore Fire Department set the contribution rate at \$162,300 for reserves beginning in 2020. The annual reserve contribution should increase annually with inflation. This amount is determined using the Cash Flow method with a Threshold Funding plan, to provide adequate reserves each time an expense is anticipated, with a minimum level of reserves (the threshold) equal to one year's contribution to reserves at all times during the study period, so that no special assessments will be required.

The main financial consideration driving the reserve contribution rate for Northshore Fire Department is the expected maintenance expense in 2040. In this year we anticipate approximately \$1,644,608 (in inflated dollar values) worth of maintenance. Most of the costs will be allocated to roofing replacement.

FUNDING PLANS

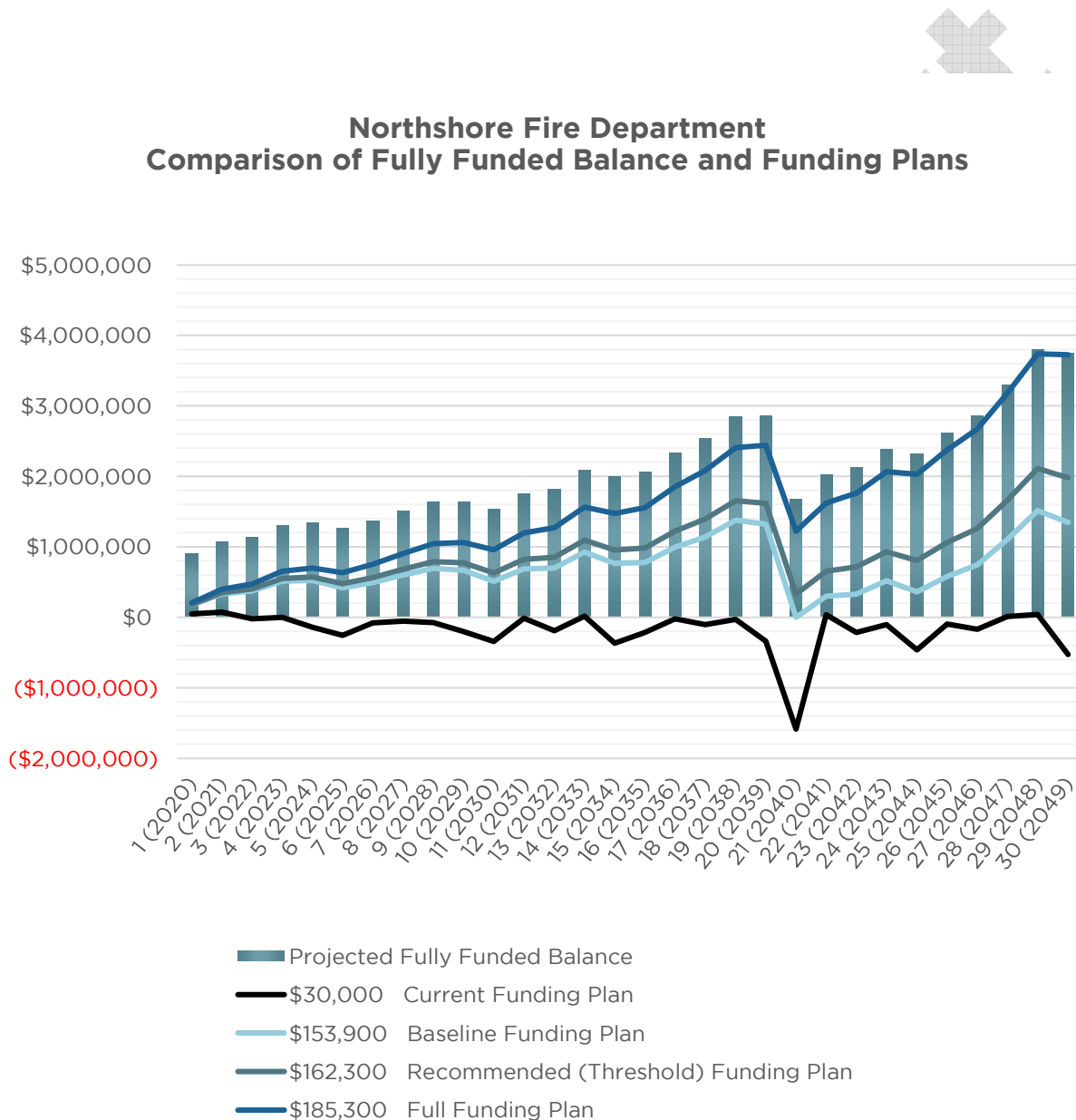
THRESHOLD FUNDING \$162,300	BASELINE FUNDING \$153,900	FULLY FUNDING \$185,300
A starting annual contribution of \$162,300 fulfills the definition of a Threshold Funding plan which provides funding as expenses are incurred over time, while always maintaining a minimum reserve fund balance of one year's contribution to reserves. This is our recommended funding plan.	An alternative strategy Northshore Fire Department could employ is Baseline Funding. This provides for necessary expenditures without maintaining a minimum reserve fund balance. To pursue such a strategy, the recommended Baseline Funding contribution rate would be \$153,900.	Northshore Fire Department could also consider contributions to obtain and maintain the level of reserves to be Fully Funded, so that the Percent Fully Funded is 100% by Year 30. The recommended Full Funding contribution rate would be \$185,300.



Comparison of Funding Plans and Fully Funded Balance Over 30 Years

Below is a line graph in compliance with RCW 64.90.550 §2(j) which depicts the projected fiscal year end reserve balance for the Current, Baseline, Recommended and Full Funding Plans for Northshore Fire Department.

The bar graph represents the projected Fully Funded Balance each year for the next 30 years.





Projected Reserve Account Balance for Funding Plans Over 30 Years

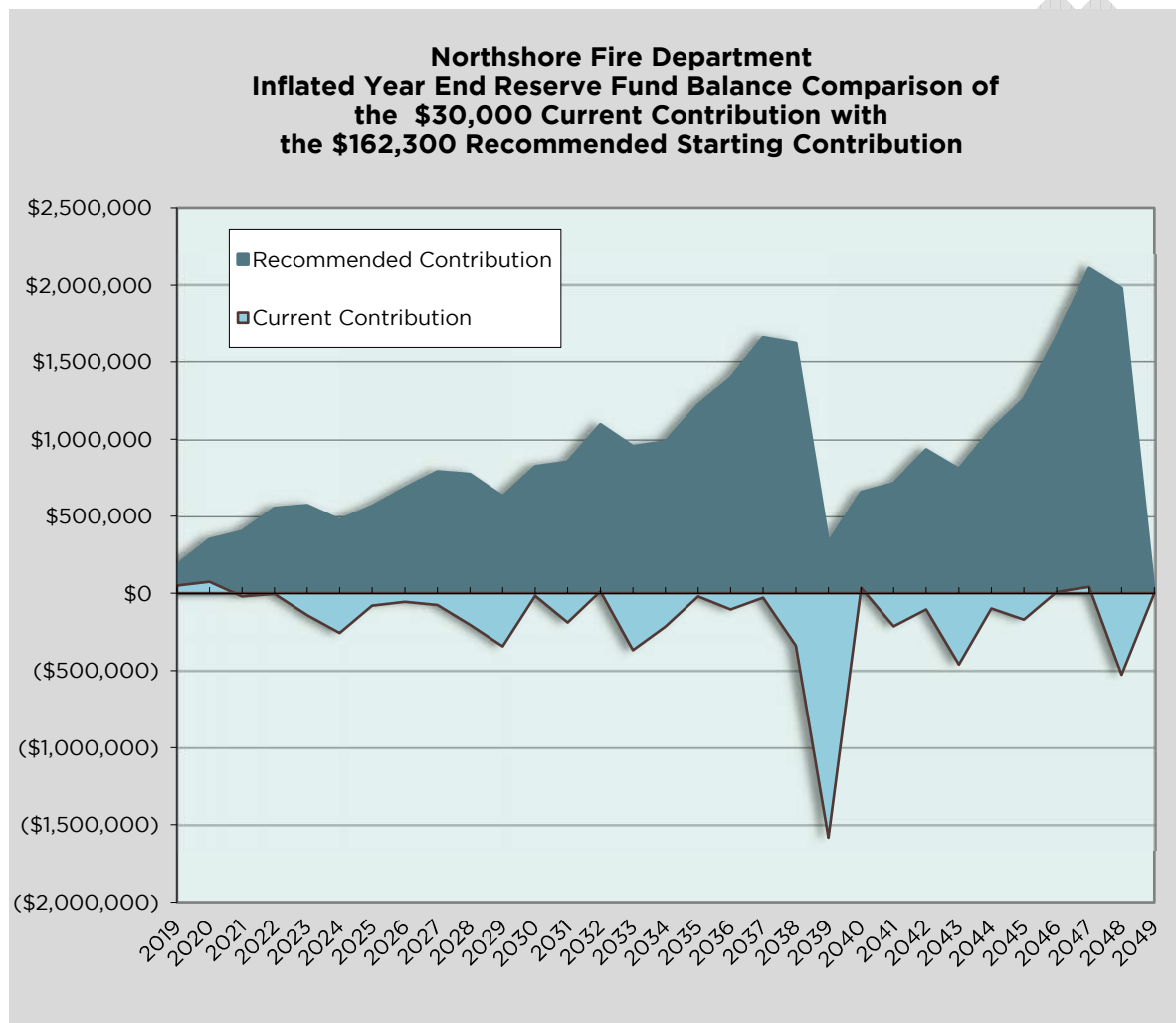
Per RCW 64.90.550 §2 (j) of the Washington Unified Common Interest Owners Act (WUCIOA), the projected reserve account balance for each of the funding plans over the next 30 years is provided, along with the current funding plan projections.

Fiscal Year End	\$30,000 Current Funding Plan	\$162,300 Recommended (Threshold) Funding Plan	\$153,900 Baseline Funding Plan	\$185,300 Full Funding Plan
1 (2020)	\$49,645	\$183,268	\$174,784	\$206,498
2 (2021)	\$75,685	\$349,613	\$332,220	\$397,234
3 (2022)	(\$20,959)	\$400,754	\$374,013	\$473,973
4 (2023)	(\$2,818)	\$551,936	\$515,390	\$652,004
5 (2024)	(\$142,120)	\$569,828	\$523,002	\$698,042
6 (2025)	(\$257,932)	\$475,619	\$418,021	\$633,327
7 (2026)	(\$80,709)	\$563,168	\$494,288	\$751,769
8 (2027)	(\$55,996)	\$682,215	\$601,523	\$903,157
9 (2028)	(\$75,773)	\$788,598	\$695,545	\$1,043,386
10 (2029)	(\$204,038)	\$772,639	\$666,655	\$1,062,833
11 (2030)	(\$344,252)	\$628,622	\$507,889	\$959,199
12 (2031)	(\$15,050)	\$821,712	\$685,325	\$1,195,153
13 (2032)	(\$189,803)	\$850,803	\$697,810	\$1,269,710
14 (2033)	\$13,750	\$1,095,048	\$924,452	\$1,562,156
15 (2034)	(\$368,309)	\$953,280	\$764,032	\$1,471,461
16 (2035)	(\$216,155)	\$984,179	\$775,177	\$1,556,447
17 (2036)	(\$20,486)	\$1,223,477	\$993,566	\$1,852,996
18 (2037)	(\$105,175)	\$1,393,217	\$1,141,184	\$2,083,308
19 (2038)	(\$28,585)	\$1,655,380	\$1,379,952	\$2,409,527
20 (2039)	(\$340,480)	\$1,618,808	\$1,318,650	\$2,440,668
21 (2040)	(\$1,584,349)	\$328,987	\$2,699	\$1,222,395
22 (2041)	\$34,782	\$654,157	\$300,269	\$1,623,134
23 (2042)	(\$213,748)	\$713,263	\$330,236	\$1,762,027
24 (2043)	(\$105,572)	\$930,914	\$517,132	\$2,063,888
25 (2044)	(\$461,685)	\$805,776	\$359,546	\$2,027,596
26 (2045)	(\$97,422)	\$1,059,232	\$578,779	\$2,374,757
27 (2046)	(\$171,110)	\$1,258,625	\$742,089	\$2,672,949
28 (2047)	\$9,938	\$1,661,266	\$1,106,698	\$3,179,726
29 (2048)	\$41,464	\$2,111,476	\$1,516,833	\$3,739,664
30 (2049)	(\$528,432)	\$1,980,284	\$1,343,426	\$3,724,059



Inflated Year End Reserve Fund Balance Comparison

Below is a graph illustrating the projected year end reserve fund balance using both the current (2019) budgeted annual contribution and the recommended starting (2020) contribution.



We recommend that Northshore Fire Department adopt a policy regarding their reserve funding which would address the level of funding that the Organization would strive to maintain, as well as methods of investing reserve funds to best match risk with return and investment length with expected.



Five Year Funding Plan Comparison

Below is a comparison of the fully funded balance and year end reserve fund balance using the budgeted reserve funding for the current 2019 fiscal year and the three funding plans presented in the report. The calculations include inflated values, interest, and special assessments (if applicable) through Year 5 (2024).

Northshore Fire Department Five Year Funding Plan Comparison

Including Inflated Values, Interest and Special Assessments

\$30,000 Current Funding Plan

Year	Annual Reserve Contribution	Special Assessment	Year End Reserve Balance	% Funded	Special Assessment Risk Level
1 (2020)	\$30,000	\$0	\$49,645	6%	High Risk
2 (2021)	\$30,900	\$0	\$75,685	7%	High Risk
3 (2022)	\$31,827	\$0	(\$20,412)	-2%	High Risk
4 (2023)	\$32,782	\$0	(\$2,846)	0%	High Risk
5 (2024)	\$33,765	\$0	(\$143,541)	-11%	High Risk

\$153,900 Baseline Funding Plan

Year	Annual Reserve Contribution	Special Assessment	Year End Reserve Balance	% Funded	Special Assessment Risk Level
1 (2020)	\$153,900	\$0	\$174,784	19%	High Risk
2 (2021)	\$158,517	\$0	\$332,220	31%	Moderate Risk
3 (2022)	\$163,273	\$0	\$374,013	33%	Moderate Risk
4 (2023)	\$168,171	\$0	\$515,390	40%	Moderate Risk
5 (2024)	\$173,216	\$0	\$523,002	39%	Moderate Risk

\$162,300 Recommended (Threshold) Funding Plan

Year	Annual Reserve Contribution	Special Assessment	Year End Reserve Balance	% Funded	Special Assessment Risk Level
1 (2020)	\$162,300	\$0	\$183,268	20%	High Risk
2 (2021)	\$167,169	\$0	\$349,613	33%	Moderate Risk
3 (2022)	\$172,184	\$0	\$400,754	35%	Moderate Risk
4 (2023)	\$177,350	\$0	\$551,936	42%	Moderate Risk
5 (2024)	\$182,670	\$0	\$569,828	43%	Moderate Risk

\$185,300 Full Funding Plan

Year	Annual Reserve Contribution	Special Assessment	Year End Reserve Balance	% Funded	Special Assessment Risk Level
1 (2020)	\$185,300	\$0	\$206,498	23%	High Risk
2 (2021)	\$190,859	\$0	\$397,234	37%	Moderate Risk
3 (2022)	\$196,585	\$0	\$473,973	42%	Moderate Risk
4 (2023)	\$202,482	\$0	\$652,004	50%	Moderate Risk
5 (2024)	\$208,557	\$0	\$698,042	52%	Moderate Risk



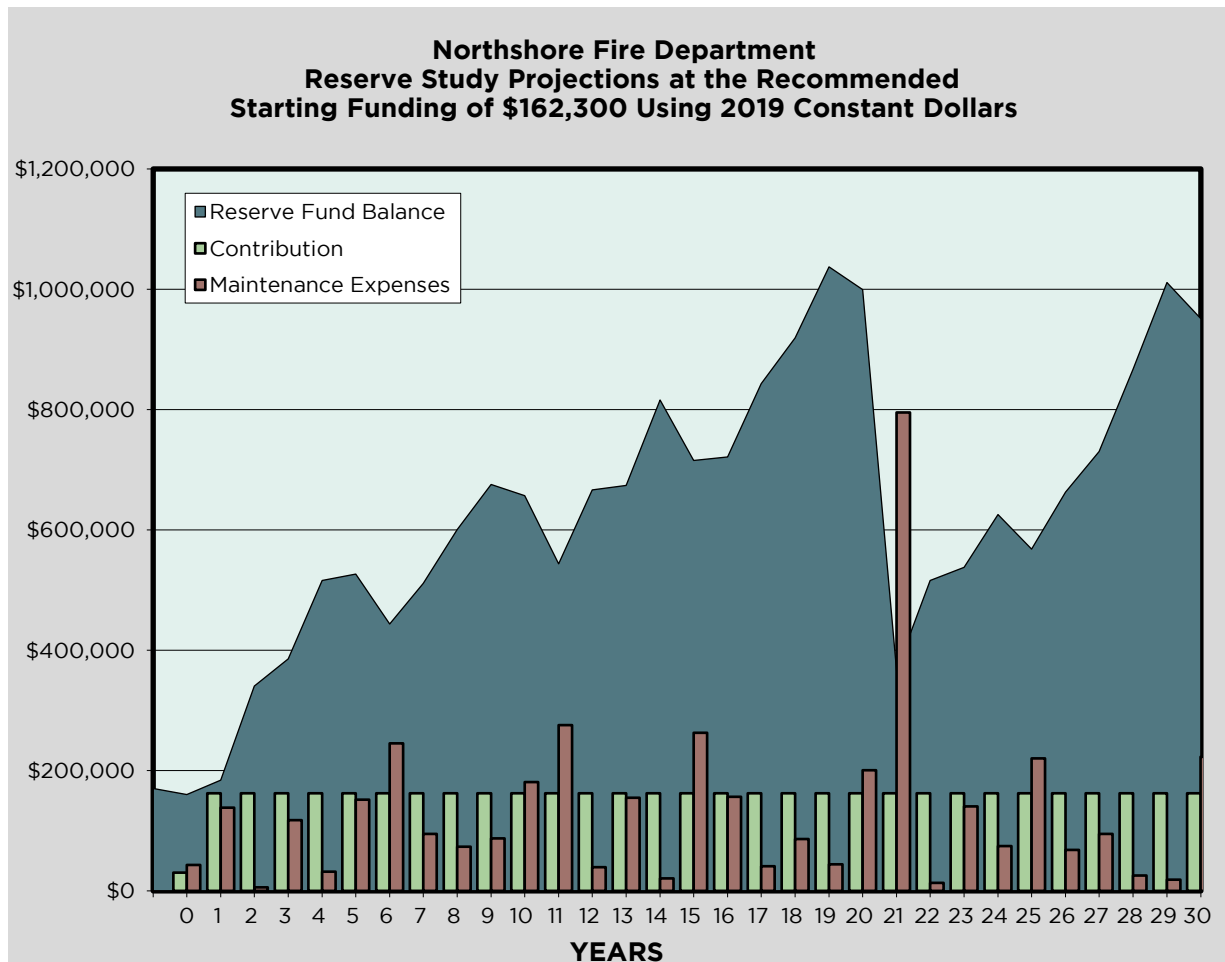
Reserve Study Projections using Constant Dollar Values

Teal Line Graph: The year-end running reserve fund balance is shown as a line graph in teal. Our recommended funding plan is a threshold funding plan which ensures that the reserve account balance does not dip below a designated “threshold”, which is set to one year’s contribution to reserves.

Mint Green Bars: The annual reserve fund contributions are shown as mint green bars. This chart depicts the annual contribution in constant dollars, so the contributions are constantly \$162,300 over the 30 year timeline of the study.

Brick Red Bars: The anticipated yearly maintenance expenses are shown as brick red bars, depicting the anticipated expenses over the next 30 years.

Below is a graph depicting the projected fiscal year end running reserve fund balance over 30 years, the annual contribution and the anticipated yearly maintenance expenses using constant dollar values.





**Reserve Study Projections at the Starting Recommended Funding of \$162,300
Using Constant Dollar Values**



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	1 2020	2 2021	3 2022	4 2023	5 2024
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$18,190				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$1,670				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$7,300
Stn.51 2.7.3	Gate Operator - Maintenance	3	3			\$1,650		
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$2,200
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3			\$5,450		
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$6,140				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3			\$21,880		
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3			\$5,060		
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6					
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1	\$21,190				
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$2,500				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3			\$8,800		
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3			\$11,000		
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$8,000
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3			\$15,000		
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$24,750
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,000				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,000				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$16,500				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3			\$15,150		
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$5,000		
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	1 2020	2 2021	3 2022	4 2023	5 2024
Stn.51	15.4.2 Fire Sprinkler System - Maintenance	15	6					
Stn.51	15.5.1 Water Heater - Contingency	20	11					
Stn.51	15.6.1 Heat Recovery Unit - Replace	25	16					
Stn.51	15.6.2 Indirect Makeup AHU - Replace	20	11					
Stn.51	15.6.3 Furnace - Replace	20	11					
Stn.51	15.6.4 VRF Heat Pump - Contingency	6	6					
Stn.51	15.6.5 HVAC System - Contingency	5	5					\$5,000
Stn.51	15.6.6 Infrared Heaters - Replace	20	11					
Stn.51	15.7.1 Exhaust Fans - Contingency	5	5					\$7,620
Stn.51	16.3.1 Electrical System - Contingency	10	10					
Stn.51	16.5.1 Emergency Generator - Replace	30	21					
Stn.51	16.5.2 Generator Fuel Tank - Replace	30	21					
Stn.51	16.6.1 Exterior Light Fixtures - Replace	10	1	\$10,000				
Stn.51	16.8.1 Fire Control Panel - Replace	20	11					
Stn.51	16.9.1 Audio/Visual Equipment - Upgrades	15	6					
Stn.51	17.1.1 Fireblast 451 - Maintenance	10	1	\$10,000				
Stn.51	18.1.1 Security / Surveillance System - Replace	10	1	\$16,000				
Stn.57	2.6.1 Asphalt Paving - Repair	6	1	\$4,040				
Stn.57	2.6.2 Asphalt Pavement- Seal Coat & Restripe	6	1	\$5,050				
Stn.57	2.7.4 Privacy Wood Fence - Replace	15	10					
Stn.57	2.7.5 Chain-link Fence - Repair	40	20					
Stn.57	2.9.2 Landscaping - Maintenance	8	8					
Stn.57	2.9.3 Wetland - Maintenance	15	15					
Stn.57	3.3.3 Exterior Concrete Paving - Repair	6	4				\$3,200	
Stn.57	6.1.2 Garbage Bin Enclosure - Contingency	20	20					
Stn.57	6.4.5 Brick Siding - Maintenance	20	10					
Stn.57	7.3.2 Gutters & Downspouts - Replace	20	13					
Stn.57	7.4.7 Metal Roof - Replace	40	13					
Stn.57	7.4.8 Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57	8.2.8 Common Doors & Hardware - Maintenance	10	5					\$3,320
Stn.57	8.2.6 Overhead Bay Door - Replace	20	10					
Stn.57	8.2.7 Bay Door Operator - Contingency	20	20					
Stn.57	8.3.3 Storefront System - Maintenance	10	10					
Stn.57	8.5.2 Aluminum Framed Windows - Replace	45	18					
Stn.57	9.8.5 Front Entry Steel Framed Structure - Paint	10	4				\$2,250	
Stn.57	10.4.2 Exterior Signage - Refurbish	15	12					
Stn.57	11.4.3 Kitchen Equipment - Contingency	5	8					
Stn.57	11.6.4 Laundry Equipment - Contingency	5	5					\$3,300
Stn.57	11.6.5 Station Extractor - Bunker Gear Washer	12	7					
Stn.57	11.8.2 Air Compressor - Replace	12	13					
Stn.57	12.3.1 Interior Concrete Floor - Refurbish	25	26					
Stn.57	12.3.2 Apparatus Bay - Refurbish	10	5					\$13,500
Stn.57	12.3.3 Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$7,000
Stn.57	12.3.4 Front Reception Desk & Office - Remodel	10	3			\$25,000		
Stn.57	12.3.5 Kitchen - Remodel	10	5					\$10,000
Stn.57	12.3.6 Day / Dining Room - Remodel	15	5					\$15,000
Stn.57	12.3.7 Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57	12.3.8 Exercise Room - Refurbish	15	16					
Stn.57	12.3.9 Locker & Restroom - Refurbish	15	7					
Stn.57	12.3.10 Laundry & Utility Room - Refurbish	10	10					
Stn.57	15.2.3 Plumbing System - Contingency	10	6					
Stn.57	15.3.3 Irrigation System - Contingency	5	5					\$2,500
Stn.57	15.4.3 Fire Detection System - Maintenance	15	7					
Stn.57	15.4.4 Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57	15.5.2 Water Heater - Replace	15	4				\$7,920	
Stn.57	15.6.7 HVAC Units - Replace	15	8					
Stn.57	15.6.8 Furnace - Replace	10	6					
Stn.57	15.6.9 Infrared Overhead Heaters - Replace	10	10					
Stn.57	15.7.2 Exhaust Fans - Contingency	5	5					\$4,360
Stn.57	16.3.2 Electrical System - Contingency	20	10					
Stn.57	16.5.3 Emergency Generator - Contingency	20	20					
Stn.57	16.6.2 Exterior Light Fixtures - Replace	15	2		\$2,750			
Stn.57	16.8.2 Fire Control Panel - Replace	20	10					
Stn.57	18.1.2 Security / Surveillance System - Upgrade	10	1	\$15,000				
TOTAL EXPENDED BY YEAR				\$138,280	\$5,750	\$117,570	\$31,630	\$151,720
CARRY OVER RESERVES				\$159,998	\$184,018	\$340,568	\$385,298	\$515,968
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$138,280	\$5,750	\$117,570	\$31,630	\$151,720
ACCUMULATED RESERVES				\$184,018	\$340,568	\$385,298	\$515,968	\$526,548
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$184,018	\$340,568	\$385,298	\$515,968	\$526,548
STUDY YEAR				1 (2020)	2 (2021)	3 (2022)	4 (2023)	5 (2024)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

	#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
Stn.51	2.4.1	Concrete - Paving Repairs	10	1					
Stn.51	2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51	2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51	2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51	2.7.3	Gate Operator - Maintenance	3	3	\$1,650			\$1,650	
Stn.51	2.8.1	Wood Benches - Maintenance	10	5					
Stn.51	2.9.1	Landscaping - Maintenance	8	8			\$15,000		
Stn.51	3.3.1	Concrete Walkways - Repair	6	3				\$5,450	
Stn.51	3.3.2	Cast Concrete Retaining Walls - Repair	15	6	\$15,870				
Stn.51	6.1.1	Garbage Bin Enclosure - Repair	15	6	\$2,500				
Stn.51	6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51	6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51	6.4.1	Brick Siding - Maintenance	20	11					
Stn.51	6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51	6.4.4	Metal Siding - Replace	35	26					
Stn.51	7.1.1	Sealant Joints - Replace	15	6	\$22,440				
Stn.51	7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51	7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51	7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51	7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51	7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51	8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4	Coiling Door - Maintenance	30	21					
Stn.51	8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1	Storefront System - Maintenance	15	6	\$7,670				
Stn.51	8.3.2	Storefront System - Replace	60	52					
Stn.51	8.5.1	Aluminum Windows - Replace	40	31					
Stn.51	9.8.1	Cedar Wood Siding - Maintenance	6	3				\$21,880	
Stn.51	9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51	9.8.3	Exterior Steel - Maintenance	6	6	\$8,000				
Stn.51	9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1				\$21,190	
Stn.51	10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51	10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51	11.1.1	Propane Forklift - Replace	20	10					\$22,000
Stn.51	11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$5,000		
Stn.51	11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51	11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51	11.8.1	Air Compressor System - Replace	15	6	\$8,800				
Stn.51	12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51	12.1.2	Admin Common Areas - Repaint	16	7		\$17,320			
Stn.51	12.1.3	Exercise Room - Refurbish	20	11					
Stn.51	12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51	12.1.5	Admin Offices - Refurbish	16	7		\$25,000			
Stn.51	12.1.6	Lobby - Refurbish	15	8			\$20,000		
Stn.51	12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51	12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1	Duty Crew Common Areas - Full Repaint	16	9				\$13,770	
Stn.51	12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51	12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51	12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51	12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51	12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6	\$6,000				
Stn.51	12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51	12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7		\$24,540			
Stn.51	12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4	2nd Floor Resilient Flooring - Replace	15	6	\$2,710				
Stn.51	12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6	2nd Floor Sheet Flooring - Replace	15	6	\$41,420				
Stn.51	12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51	12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1	Elevator - Major Upgrades	40	31					
Stn.51	14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1	Irrigation System - Contingency	10	10					\$10,300
Stn.51	15.3.2	Storm Water System - Contingency	3	3	\$5,000			\$5,000	
Stn.51	15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$8,000				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6	\$19,330				
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$5,000
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$77,000				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1		\$4,040			
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1		\$5,050			
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$6,070
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8			\$5,000		
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					\$3,200
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					\$12,830
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					\$5,700
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$19,250
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7		\$8,800			
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					\$5,000
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$2,000			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$10,000
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$5,000				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7		\$5,000			
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$5,500
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$11,000		
Stn.57 15.6.8	Furnace - Replace	10	6	\$13,750				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$5,000
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					\$6,600
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					\$3,850
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$245,140	\$94,750	\$73,330	\$87,200	\$180,950
CARRY OVER RESERVES				\$526,548	\$443,708	\$511,258	\$600,228	\$675,328
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$245,140	\$94,750	\$73,330	\$87,200	\$180,950
ACCUMULATED RESERVES				\$443,708	\$511,258	\$600,228	\$675,328	\$656,678
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$443,708	\$511,258	\$600,228	\$675,328	\$656,678
STUDY YEAR				6 (2025)	7 (2026)	8 (2027)	9 (2028)	10 (2029)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$18,190				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$1,670				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$7,300
Stn.51 2.7.3	Gate Operator - Maintenance	3	3		\$1,650			\$1,650
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$2,200
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3					\$5,450
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11	\$9,640				
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11	\$53,750				
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$6,140				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3					\$21,880
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					\$5,060
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6			\$8,000		
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$2,500				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					\$8,800
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					\$11,000
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11	\$3,000				
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$8,000
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					\$15,000
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11	\$19,250				
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$24,750
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,000				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,000				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$16,500				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					\$34,080
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11	\$2,310				
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11	\$32,180				
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					\$15,150
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$5,000		\$5,000
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11	\$16,280				
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11	\$9,900				
Stn.51 15.6.3	Furnace - Replace	20	11	\$2,200				
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6		\$19,330			
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11	\$15,180				
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$10,000				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11	\$3,740				
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$10,000				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$16,000				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1			\$4,040		
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1			\$5,050		
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					\$10,000
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13			\$3,160		
Stn.57 7.4.7	Metal Roof - Replace	40	13			\$60,060		
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$3,320
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$2,250	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12		\$2,500			
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13			\$40,040		
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$13,500
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$25,000		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$10,000
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$15,000				
TOTAL EXPENDED BY YEAR				\$275,430	\$39,480	\$154,680	\$20,510	\$262,790
CARRY OVER RESERVES				\$656,678	\$543,548	\$666,368	\$673,988	\$815,778
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$275,430	\$39,480	\$154,680	\$20,510	\$262,790
ACCUMULATED RESERVES				\$543,548	\$666,368	\$673,988	\$815,778	\$715,288
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$543,548	\$666,368	\$673,988	\$815,778	\$715,288
STUDY YEAR				11 (2030)	12 (2031)	13 (2032)	14 (2033)	15 (2034)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT. CYCLE	NEXT MAINT.	16 2035	17 2036	18 2037	19 2038	20 2039
#	COMPONENT NAME							
Stn.51	2.4.1 Concrete - Paving Repairs	10	1					
Stn.51	2.4.2 Concrete - Repaint Stalls & Curbs	10	1					
Stn.51	2.7.1 Prefinished Metal Fence - Replace	30	21					
Stn.51	2.7.2 Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51	2.7.3 Gate Operator - Maintenance	3	3			\$1,650		
Stn.51	2.8.1 Wood Benches - Maintenance	10	5					
Stn.51	2.9.1 Landscaping - Maintenance	8	8	\$15,000				
Stn.51	3.3.1 Concrete Walkways - Repair	6	3					
Stn.51	3.3.2 Cast Concrete Retaining Walls - Repair	15	6					
Stn.51	6.1.1 Garbage Bin Enclosure - Repair	15	6					
Stn.51	6.2.1 Pedestal Paver - Maintenance	30	21					
Stn.51	6.2.2 PVC Thermoplastic Membrane - Replace	30	21					
Stn.51	6.4.1 Brick Siding - Maintenance	20	11					
Stn.51	6.4.2 CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3 Fiber Cement Board Siding - Repair	10	1					
Stn.51	6.4.4 Metal Siding - Replace	35	26					
Stn.51	7.1.1 Sealant Joints - Replace	15	6					
Stn.51	7.3.1 Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51	7.4.1 Low Sloped Ribbed Roof - Replace	30	21					
Stn.51	7.4.2 Low Sloped Smooth Roof - Replace	30	21					
Stn.51	7.4.3 Tower Composition Shingles - Replace	30	21					
Stn.51	7.4.4 Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5 Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6 Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1 Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2 Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51	8.2.3 Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4 Coiling Door - Maintenance	30	21					
Stn.51	8.2.5 Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1 Storefront System - Maintenance	15	6					
Stn.51	8.3.2 Storefront System - Replace	60	52					
Stn.51	8.5.1 Aluminum Windows - Replace	40	31					
Stn.51	9.8.1 Cedar Wood Siding - Maintenance	6	3					
Stn.51	9.8.2 Concrete Siding - Maintenance	12	3					
Stn.51	9.8.3 Exterior Steel - Maintenance	6	6			\$8,000		
Stn.51	9.8.4 Fiber Cement Board Siding - Caulk & Paint	8	1		\$21,190			
Stn.51	10.4.1 Exterior Signage - Refurbish	10	1					
Stn.51	10.5.1 Exterior Mail Pedestal Unit - Replace	25	16	\$2,200				
Stn.51	11.1.1 Propane Forklift - Replace	20	10					
Stn.51	11.4.1 Admin Kitchen Equipment - Contingency	10	8			\$5,000		
Stn.51	11.4.2 Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1 Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2 Unimac Gear Extractor - Replace	12	3					
Stn.51	11.6.3 Ramair Gear Dryer - Replace	12	3					
Stn.51	11.8.1 Air Compressor System - Replace	15	6					
Stn.51	12.1.1 Apparatus Bay - Refurbish	25	16	\$68,890				
Stn.51	12.1.2 Admin Common Areas - Repaint	16	7					
Stn.51	12.1.3 Exercise Room - Refurbish	20	11					
Stn.51	12.1.4 Bunk Gear Storage - Refurbish	10	5					
Stn.51	12.1.5 Admin Offices - Refurbish	16	7					
Stn.51	12.1.6 Lobby - Refurbish	15	8					
Stn.51	12.1.7 Public Meeting Room - Refurbish	12	3					
Stn.51	12.1.8 Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1 Duty Crew Common Areas - Full Repaint	16	9					
Stn.51	12.2.2 Duty Crew Common Areas - Touchup Paint	16	17		\$13,770			
Stn.51	12.2.3 Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51	12.2.4 Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51	12.2.5 Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51	12.2.6 Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51	12.2.7 Duty Crew Restrooms - Refurbish	10	1					
Stn.51	12.4.1 1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2 2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51	12.4.3 1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4 2nd Floor Resilient Flooring - Replace	15	6					
Stn.51	12.4.5 1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6 2nd Floor Sheet Flooring - Replace	15	6					
Stn.51	12.4.7 1st Floor Stained Concrete - Refurbish	12	3					
Stn.51	12.6.1 Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1 Elevator - Major Upgrades	40	31					
Stn.51	14.1.2 Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1 Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2 Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1 Irrigation System - Contingency	10	10					\$10,300
Stn.51	15.3.2 Storm Water System - Contingency	3	3			\$5,000		
Stn.51	15.4.1 Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	16 2035	17 2036	18 2037	19 2038	20 2039
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16	\$13,200				
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6			\$19,330		
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$5,000
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1				\$4,040	
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1				\$5,050	
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					\$4,280
Stn.57 2.9.2	Landscaping - Maintenance	8	8	\$5,000				
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4	\$3,200				
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					\$1,500
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					\$55,000
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$19,250
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18			\$30,000		
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7				\$8,800	
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					\$15,000
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16	\$30,000				
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$10,000
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$5,000				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$5,500
Stn.57 15.5.2	Water Heater - Replace	15	4				\$7,920	
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6	\$13,750				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$5,000
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					\$8,800
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2		\$2,750			
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$156,240	\$40,710	\$86,310	\$44,070	\$200,280
CARRY OVER RESERVES				\$715,288	\$721,348	\$842,938	\$918,928	\$1,037,158
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$156,240	\$40,710	\$86,310	\$44,070	\$200,280
ACCUMULATED RESERVES				\$721,348	\$842,938	\$918,928	\$1,037,158	\$999,178
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$721,348	\$842,938	\$918,928	\$1,037,158	\$999,178
STUDY YEAR				16 (2035)	17 (2036)	18 (2037)	19 (2038)	20 (2039)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51	2.4.1 Concrete - Paving Repairs	10	1	\$18,190				
Stn.51	2.4.2 Concrete - Repaint Stalls & Curbs	10	1	\$1,670				
Stn.51	2.7.1 Prefinished Metal Fence - Replace	30	21	\$73,010				
Stn.51	2.7.2 Prefinished Metal Fence & Gates - Maintenance	10	5					\$7,300
Stn.51	2.7.3 Gate Operator - Maintenance	3	3	\$1,650			\$1,650	
Stn.51	2.8.1 Wood Benches - Maintenance	10	5					\$2,200
Stn.51	2.9.1 Landscaping - Maintenance	8	8				\$15,000	
Stn.51	3.3.1 Concrete Walkways - Repair	6	3	\$5,450				
Stn.51	3.3.2 Cast Concrete Retaining Walls - Repair	15	6	\$15,870				
Stn.51	6.1.1 Garbage Bin Enclosure - Repair	15	6	\$2,500				
Stn.51	6.2.1 Pedestal Paver - Maintenance	30	21	\$1,830				
Stn.51	6.2.2 PVC Thermoplastic Membrane - Replace	30	21	\$3,960				
Stn.51	6.4.1 Brick Siding - Maintenance	20	11					
Stn.51	6.4.2 CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3 Fiber Cement Board Siding - Repair	10	1	\$6,140				
Stn.51	6.4.4 Metal Siding - Replace	35	26					
Stn.51	7.1.1 Sealant Joints - Replace	15	6	\$22,440				
Stn.51	7.3.1 Scuppers, Gutters & Downspouts - Replace	30	21	\$3,570				
Stn.51	7.4.1 Low Sloped Ribbed Roof - Replace	30	21	\$189,430				
Stn.51	7.4.2 Low Sloped Smooth Roof - Replace	30	21	\$124,820				
Stn.51	7.4.3 Tower Composition Shingles - Replace	30	21	\$1,210				
Stn.51	7.4.4 Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5 Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6 Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1 Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2 Overhead Bay Doors & Hardware - Replace	30	21	\$24,200				
Stn.51	8.2.3 Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4 Coiling Door - Maintenance	30	21	\$9,900				
Stn.51	8.2.5 Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1 Storefront System - Maintenance	15	6	\$7,670				
Stn.51	8.3.2 Storefront System - Replace	60	52					
Stn.51	8.5.1 Aluminum Windows - Replace	40	31					
Stn.51	9.8.1 Cedar Wood Siding - Maintenance	6	3	\$21,880				
Stn.51	9.8.2 Concrete Siding - Maintenance	12	3					
Stn.51	9.8.3 Exterior Steel - Maintenance	6	6				\$8,000	
Stn.51	9.8.4 Fiber Cement Board Siding - Caulk & Paint	8	1					\$21,190
Stn.51	10.4.1 Exterior Signage - Refurbish	10	1	\$2,500				
Stn.51	10.5.1 Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51	11.1.1 Propane Forklift - Replace	20	10					
Stn.51	11.4.1 Admin Kitchen Equipment - Contingency	10	8					
Stn.51	11.4.2 Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1 Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2 Unimac Gear Extractor - Replace	12	3					
Stn.51	11.6.3 Ramair Gear Dryer - Replace	12	3					
Stn.51	11.8.1 Air Compressor System - Replace	15	6	\$8,800				
Stn.51	12.1.1 Apparatus Bay - Refurbish	25	16					
Stn.51	12.1.2 Admin Common Areas - Repaint	16	7			\$17,320		
Stn.51	12.1.3 Exercise Room - Refurbish	20	11					
Stn.51	12.1.4 Bunk Gear Storage - Refurbish	10	5					\$8,000
Stn.51	12.1.5 Admin Offices - Refurbish	16	7			\$25,000		
Stn.51	12.1.6 Lobby - Refurbish	15	8			\$20,000		
Stn.51	12.1.7 Public Meeting Room - Refurbish	12	3					
Stn.51	12.1.8 Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1 Duty Crew Common Areas - Full Repaint	16	9					\$13,770
Stn.51	12.2.2 Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51	12.2.3 Duty Crew Sleep Room Interiors - Refurbish	10	5					\$24,750
Stn.51	12.2.4 Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,000				
Stn.51	12.2.5 Duty Crew Laundry Interiors - Refurbish	10	1	\$2,000				
Stn.51	12.2.6 Duty Crew Office/Training Areas - Refurbish	15	6	\$6,000				
Stn.51	12.2.7 Duty Crew Restrooms - Refurbish	10	1	\$16,500				
Stn.51	12.4.1 1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2 2nd Floor Interior Carpet Flooring - Replace	16	7			\$24,540		
Stn.51	12.4.3 1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4 2nd Floor Resilient Flooring - Replace	15	6	\$2,710				
Stn.51	12.4.5 1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6 2nd Floor Sheet Flooring - Replace	15	6	\$41,420				
Stn.51	12.4.7 1st Floor Stained Concrete - Refurbish	12	3					
Stn.51	12.6.1 Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1 Elevator - Major Upgrades	40	31					
Stn.51	14.1.2 Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1 Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2 Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1 Irrigation System - Contingency	10	10					
Stn.51	15.3.2 Storm Water System - Contingency	3	3	\$5,000			\$5,000	
Stn.51	15.4.1 Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$8,000				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6				\$19,330	
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,000
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$7,620
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21	\$19,800				
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21	\$8,800				
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$10,000				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$77,000				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$10,000				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$16,000				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1					\$4,040
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1					\$5,050
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$6,070
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8				\$5,000	
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4		\$3,200			
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$3,320
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$2,250	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,300
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					\$40,040
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$13,500
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$25,000		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$10,000
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$2,000			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,500
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7		\$5,000			
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$11,000		
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$4,360
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$15,000				
TOTAL EXPENDED BY YEAR				\$794,920	\$13,200	\$140,190	\$74,490	\$219,880
CARRY OVER RESERVES				\$999,178	\$366,558	\$515,658	\$537,768	\$625,578
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$794,920	\$13,200	\$140,190	\$74,490	\$219,880
ACCUMULATED RESERVES				\$366,558	\$515,658	\$537,768	\$625,578	\$567,998
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$366,558	\$515,658	\$537,768	\$625,578	\$567,998
STUDY YEAR				21 (2040)	22 (2041)	23 (2042)	24 (2043)	25 (2044)

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

	#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
Stn.51	2.4.1	Concrete - Paving Repairs	10	1					
Stn.51	2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51	2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51	2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51	2.7.3	Gate Operator - Maintenance	3	3		\$1,650			\$1,650
Stn.51	2.8.1	Wood Benches - Maintenance	10	5					
Stn.51	2.9.1	Landscaping - Maintenance	8	8					
Stn.51	3.3.1	Concrete Walkways - Repair	6	3		\$5,450			
Stn.51	3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51	6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51	6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51	6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51	6.4.1	Brick Siding - Maintenance	20	11					
Stn.51	6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51	6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51	6.4.4	Metal Siding - Replace	35	26	\$41,180				
Stn.51	7.1.1	Sealant Joints - Replace	15	6					
Stn.51	7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51	7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51	7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51	7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51	7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51	7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51	7.4.6	Roof Inspection & Minor Repair	5	5					\$6,130
Stn.51	8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$5,500	
Stn.51	8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51	8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$12,760	
Stn.51	8.2.4	Coiling Door - Maintenance	30	21					
Stn.51	8.2.5	Doors & Hardware - Maintenance	5	3			\$3,580		
Stn.51	8.3.1	Storefront System - Maintenance	15	6					
Stn.51	8.3.2	Storefront System - Replace	60	52					
Stn.51	8.5.1	Aluminum Windows - Replace	40	31					
Stn.51	9.8.1	Cedar Wood Siding - Maintenance	6	3		\$21,880			
Stn.51	9.8.2	Concrete Siding - Maintenance	12	3		\$5,060			
Stn.51	9.8.3	Exterior Steel - Maintenance	6	6					\$8,000
Stn.51	9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51	10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51	10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51	11.1.1	Propane Forklift - Replace	20	10					\$22,000
Stn.51	11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$5,000		
Stn.51	11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$15,000
Stn.51	11.6.1	Laundry Equipment - Contingency	5	5					\$3,740
Stn.51	11.6.2	Unimac Gear Extractor - Replace	12	3		\$8,800			
Stn.51	11.6.3	Ramair Gear Dryer - Replace	12	3		\$11,000			
Stn.51	11.8.1	Air Compressor System - Replace	15	6					
Stn.51	12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51	12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51	12.1.3	Exercise Room - Refurbish	20	11					
Stn.51	12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51	12.1.5	Admin Offices - Refurbish	16	7					
Stn.51	12.1.6	Lobby - Refurbish	15	8					
Stn.51	12.1.7	Public Meeting Room - Refurbish	12	3		\$15,000			
Stn.51	12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51	12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51	12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51	12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51	12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51	12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51	12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51	12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51	12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51	12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51	12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51	12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51	12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51	12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51	12.4.7	1st Floor Stained Concrete - Refurbish	12	3		\$15,150			
Stn.51	12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51	14.1.1	Elevator - Major Upgrades	40	31					
Stn.51	14.1.2	Elevators - 5 Year Load Test	5	5					\$5,500
Stn.51	15.2.1	Plumbing System - Contingency	5	5					\$5,000
Stn.51	15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51	15.3.1	Irrigation System - Contingency	10	10					\$10,300
Stn.51	15.3.2	Storm Water System - Contingency	3	3		\$5,000			\$5,000
Stn.51	15.4.1	Fire Detection System - Maintenance	5	5					\$2,500

**Reserve Study Projections at Recommended Funding of \$162,300****Reserve Consultants LLC**

30-YEAR SPREADSHEET WITH CONSTANT DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
Stn.51	15.4.2 Fire Sprinkler System - Maintenance	15	6					
Stn.51	15.5.1 Water Heater - Contingency	20	11					
Stn.51	15.6.1 Heat Recovery Unit - Replace	25	16					
Stn.51	15.6.2 Indirect Makeup AHU - Replace	20	11					
Stn.51	15.6.3 Furnace - Replace	20	11					
Stn.51	15.6.4 VRF Heat Pump - Contingency	6	6					\$19,330
Stn.51	15.6.5 HVAC System - Contingency	5	5					\$5,000
Stn.51	15.6.6 Infrared Heaters - Replace	20	11					
Stn.51	15.7.1 Exhaust Fans - Contingency	5	5					\$7,620
Stn.51	16.3.1 Electrical System - Contingency	10	10					\$5,000
Stn.51	16.5.1 Emergency Generator - Replace	30	21					
Stn.51	16.5.2 Generator Fuel Tank - Replace	30	21					
Stn.51	16.6.1 Exterior Light Fixtures - Replace	10	1					
Stn.51	16.8.1 Fire Control Panel - Replace	20	11					
Stn.51	16.9.1 Audio/Visual Equipment - Upgrades	15	6					
Stn.51	17.1.1 Fireblast 451 - Maintenance	10	1					
Stn.51	18.1.1 Security / Surveillance System - Replace	10	1					
Stn.57	2.6.1 Asphalt Paving - Repair	6	1					
Stn.57	2.6.2 Asphalt Pavement- Seal Coat & Restripe	6	1					
Stn.57	2.7.4 Privacy Wood Fence - Replace	15	10					
Stn.57	2.7.5 Chain-link Fence - Repair	40	20					
Stn.57	2.9.2 Landscaping - Maintenance	8	8					
Stn.57	2.9.3 Wetland - Maintenance	15	15					\$10,000
Stn.57	3.3.3 Exterior Concrete Paving - Repair	6	4			\$3,200		
Stn.57	6.1.2 Garbage Bin Enclosure - Contingency	20	20					
Stn.57	6.4.5 Brick Siding - Maintenance	20	10					\$12,830
Stn.57	7.3.2 Gutters & Downspouts - Replace	20	13					
Stn.57	7.4.7 Metal Roof - Replace	40	13					
Stn.57	7.4.8 Roof Inspection & Minor Repair	5	2		\$3,000			
Stn.57	8.2.8 Common Doors & Hardware - Maintenance	10	5					
Stn.57	8.2.6 Overhead Bay Door - Replace	20	10					\$5,700
Stn.57	8.2.7 Bay Door Operator - Contingency	20	20					
Stn.57	8.3.3 Storefront System - Maintenance	10	10					\$19,250
Stn.57	8.5.2 Aluminum Framed Windows - Replace	45	18					
Stn.57	9.8.5 Front Entry Steel Framed Structure - Paint	10	4					
Stn.57	10.4.2 Exterior Signage - Refurbish	15	12		\$2,500			
Stn.57	11.4.3 Kitchen Equipment - Contingency	5	8			\$13,750		
Stn.57	11.6.4 Laundry Equipment - Contingency	5	5					\$3,300
Stn.57	11.6.5 Station Extractor - Bunker Gear Washer	12	7					
Stn.57	11.8.2 Air Compressor - Replace	12	13					
Stn.57	12.3.1 Interior Concrete Floor - Refurbish	25	26	\$7,900				
Stn.57	12.3.2 Apparatus Bay - Refurbish	10	5					
Stn.57	12.3.3 Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$7,000
Stn.57	12.3.4 Front Reception Desk & Office - Remodel	10	3					
Stn.57	12.3.5 Kitchen - Remodel	10	5					
Stn.57	12.3.6 Day / Dining Room - Remodel	15	5					
Stn.57	12.3.7 Duty Crew Sleep Rooms - Refurbish	20	10					\$5,000
Stn.57	12.3.8 Exercise Room - Refurbish	15	16					
Stn.57	12.3.9 Locker & Restroom - Refurbish	15	7					
Stn.57	12.3.10 Laundry & Utility Room - Refurbish	10	10					\$10,000
Stn.57	15.2.3 Plumbing System - Contingency	10	6	\$5,000				
Stn.57	15.3.3 Irrigation System - Contingency	5	5					\$2,500
Stn.57	15.4.3 Fire Detection System - Maintenance	15	7					
Stn.57	15.4.4 Wet & Dry Fire Sprinkler System - Contingency	10	10					\$5,500
Stn.57	15.5.2 Water Heater - Replace	15	4					
Stn.57	15.6.7 HVAC Units - Replace	15	8					
Stn.57	15.6.8 Furnace - Replace	10	6	\$13,750				
Stn.57	15.6.9 Infrared Overhead Heaters - Replace	10	10					\$5,000
Stn.57	15.7.2 Exhaust Fans - Contingency	5	5					\$4,360
Stn.57	16.3.2 Electrical System - Contingency	20	10					\$6,600
Stn.57	16.5.3 Emergency Generator - Contingency	20	20					
Stn.57	16.6.2 Exterior Light Fixtures - Replace	15	2					
Stn.57	16.8.2 Fire Control Panel - Replace	20	10					\$3,850
Stn.57	18.1.2 Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$67,830	\$94,490	\$25,530	\$18,260	\$222,660
CARRY OVER RESERVES				\$567,998	\$662,468	\$730,278	\$867,048	\$1,011,088
ANNUAL RESERVE CONTRIB				\$162,300	\$162,300	\$162,300	\$162,300	\$162,300
RESERVE EXPENDITURES				\$67,830	\$94,490	\$25,530	\$18,260	\$222,660
ACCUMULATED RESERVES				\$662,468	\$730,278	\$867,048	\$1,011,088	\$950,728
INTEREST EARNED				\$0	\$0	\$0	\$0	\$0
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$662,468	\$730,278	\$867,048	\$1,011,088	\$950,728
STUDY YEAR				26 (2045)	27 (2046)	28 (2047)	29 (2048)	30 (2049)

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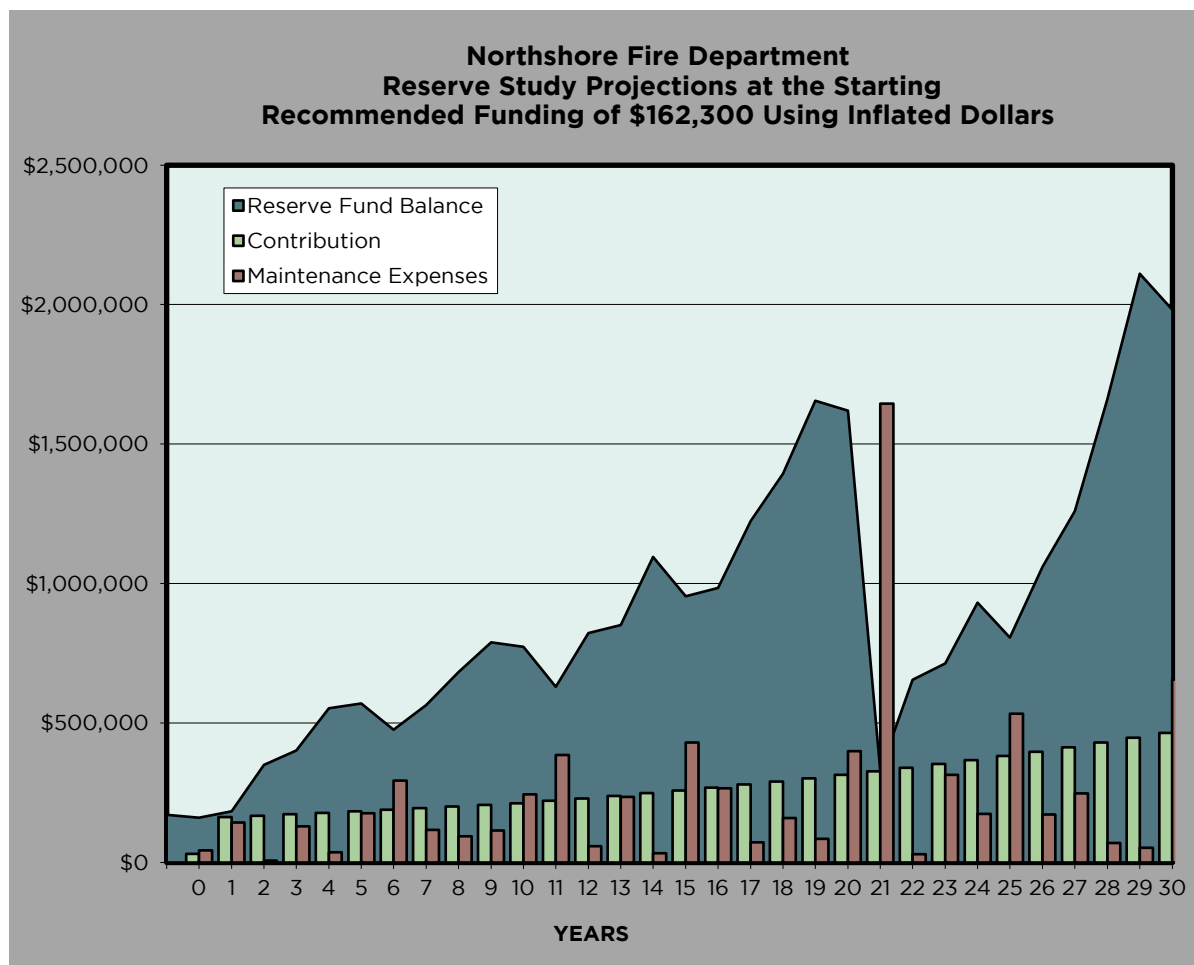
Reserve Study Projections using Inflated Dollar Values

Teal Line Graph: The year-end running reserve fund balance is shown as a line graph in teal and includes compound interest. Our recommended funding plan is a threshold funding plan which ensures that the reserve account balance does not dip below a designated “threshold”, which is set to one year’s contribution to reserves.

Mint Green Bars: The annual reserve fund contributions are shown as mint green bars. This chart depicts the annual contribution in inflated dollars, so the contributions are increasing over the 30 year timeline of the study.

Brick Red Bars: The anticipated yearly maintenance expenses are shown as brick red bars, depicting the anticipated inflated expenses over the next 30 years.

Below is a graph depicting the projected fiscal year end running reserve fund balance over 30 years with interest, the annual inflated contribution and the anticipated yearly maintenance expenses using inflated dollar values.





**Reserve Study Projections at the Starting Recommended Funding of \$162,300
Using Inflated Dollar Values**



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT.	NEXT	1	2	3	4	5
#	COMPONENT NAME	CYCLE	MAINT.	2020	2021	2022	2023	2024
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$18,736				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$1,720				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3			\$1,803		\$8,463
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$2,550
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3			\$5,955		
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$6,324				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$7,106
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$6,190	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$14,361	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$3,912		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3			\$23,909		
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3			\$5,529		
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6					
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1	\$21,826				
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$2,575				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$17,389
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$4,336
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3			\$9,616		
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3			\$12,020		
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$9,274
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3			\$16,391		
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$28,692
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$10,300				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,060				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$16,995				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3			\$16,555		
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$6,376
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$5,796
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$5,464		
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$2,898



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	1 2020	2 2021	3 2022	4 2023	5 2024
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6					
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$5,796
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$8,834
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$10,300				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$10,300				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$16,480				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1	\$4,161				
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1	\$5,202				
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4				\$3,602	
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,183			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$3,849
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$2,532	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8					
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$3,826
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$15,650
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$8,115
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$27,318		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$11,593
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					\$17,389
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$2,898
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4				\$8,914	
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$5,054
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2		\$2,917			
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$15,450				
TOTAL EXPENDED BY YEAR				\$142,428	\$6,100	\$128,472	\$35,600	\$175,885
CARRY OVER RESERVES				\$159,998	\$183,268	\$349,613	\$400,754	\$551,936
ANNUAL RESERVE CONTRIB				\$162,300	\$167,169	\$172,184	\$177,350	\$182,670
RESERVE EXPENDITURES				\$142,428	\$6,100	\$128,472	\$35,600	\$175,885
ACCUMULATED RESERVES				\$179,869	\$344,337	\$393,325	\$542,504	\$558,722
INTEREST EARNED				\$3,399	\$5,276	\$7,429	\$9,433	\$11,107
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$183,268	\$349,613	\$400,754	\$551,936	\$569,828
YEARS	0-1	2-10	11-30	1 (2020)	2 (2021)	3 (2022)	4 (2023)	5 (2024)
CONTRIBUTION INFLATION	0%	3%	4%	0%	3%	3%	3%	3%
COMPONENT COMPOUND INFLATION	3%	3%	4%	103%	106%	109%	113%	116%
INTEREST RATE MULTIPLIER	2%	2%	3%	2%	2%	2%	2%	2%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
#	COMPONENT NAME							
Stn.51 2.4.1	Concrete - Paving Repairs	10	1					
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3	\$1,970			\$2,153	
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					
Stn.51 2.9.1	Landscaping - Maintenance	8	8			\$19,002		
Stn.51 3.3.1	Concrete Walkways - Repair	6	3				\$7,111	
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6	\$18,950				
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6	\$2,985				
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6	\$26,795				
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$8,238
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$7,176	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$16,649	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$4,535		
Stn.51 8.3.1	Storefront System - Maintenance	15	6	\$9,158				
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3				\$28,548	
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6	\$9,552				
Stn.51 9.6.4	Fiber Cement Board Siding - Caulk & Paint	8	1				\$27,648	
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					\$29,566
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$6,334		
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$20,159
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$5,026
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51 11.8.1	Air Compressor System - Replace	15	6	\$10,508				
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7		\$21,301			
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51 12.1.5	Admin Offices - Refurbish	16	7		\$30,747			
Stn.51 12.1.6	Lobby - Refurbish	15	8			\$25,335		
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9				\$17,967	
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6	\$7,164				
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7		\$30,181			
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6	\$3,236				
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6	\$49,458				
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$7,392
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$6,720
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					\$13,842
Stn.51 15.3.2	Storm Water System - Contingency	3	3	\$5,970			\$6,524	
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$3,360



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	6 2025	7 2026	8 2027	9 2028	10 2029
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$9,552				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6	\$23,081				
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$6,720
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$10,241
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$6,720
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$91,942				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1		\$4,969			
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1		\$6,211			
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$8,158
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8			\$6,334		
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					\$4,301
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					\$17,242
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$3,690			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					\$7,660
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$25,870
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$17,418		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$4,435
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7		\$10,823			
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					\$6,720
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$2,460			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$13,439
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$5,970				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$3,360
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7		\$6,149			
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$7,392
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$13,934		
Stn.57 15.6.8	Furnace - Replace	10	6	\$16,418				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$6,720
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$5,859
Stn.57 16.3.2	Electrical System - Contingency	20	10					\$8,870
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					\$5,174
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$292,710	\$116,531	\$92,892	\$113,776	\$243,182
CARRY OVER RESERVES				\$569,828	\$475,619	\$563,168	\$682,215	\$788,598
ANNUAL RESERVE CONTRIB				\$188,150	\$193,795	\$199,609	\$205,597	\$211,765
RESERVE EXPENDITURES				\$292,710	\$116,531	\$92,892	\$113,776	\$243,182
ACCUMULATED RESERVES				\$465,268	\$552,883	\$669,885	\$774,036	\$757,181
INTEREST EARNED				\$10,351	\$10,285	\$12,331	\$14,563	\$15,458
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$475,619	\$563,168	\$682,215	\$788,598	\$772,639
YEARS	0-1	2-10	11-30	6 (2025)	7 (2026)	8 (2027)	9 (2028)	10 (2029)
CONTRIBUTION INFLATION	0%	3%	4%	3%	3%	3%	3%	3%
COMPONENT COMPOUND INFLATION	3%	3%	4%	119%	123%	127%	130%	134%
INTEREST RATE MULTIPLIER	2%	2%	3%	2%	2%	2%	2%	2%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
#	COMPONENT NAME							
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$25,424				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$2,334				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$11,936
Stn.51 2.7.3	Gate Operator - Maintenance	3	3		\$2,398			\$2,698
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$3,597
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3					\$8,911
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11	\$13,474				
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11	\$75,125				
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$8,582				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$10,023
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$8,647	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$20,061	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$5,412		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3					\$35,776
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					\$8,274
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6			\$11,629		
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$3,494				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$24,526
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$6,115
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					\$14,389
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					\$17,986
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11	\$4,193				
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$13,081
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					\$24,526
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11		\$26,905			
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$40,468
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$13,977				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$2,795				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$23,062				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					\$55,724
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11	\$3,229				
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11	\$44,977				
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					\$24,771
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$8,993
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$8,175
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$7,268		\$8,175
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$4,088



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	11 2030	12 2031	13 2032	14 2033	15 2034
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11	\$22,754				
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11	\$13,837				
Stn.51 15.6.3	Furnace - Replace	20	11	\$3,075				
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6		\$28,098			
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$8,175
Stn.51 15.6.6	Infrared Heaters - Replace	20	11	\$21,217				
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$12,459
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$13,977				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11	\$5,227				
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$13,977				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$22,363				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1			\$6,107		
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1			\$7,634		
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					\$16,351
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4					
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13			\$4,777		
Stn.57 7.4.7	Metal Roof - Replace	40	13			\$90,794		
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$4,361			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$5,428
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$3,537	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12		\$3,634			
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$20,786		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$5,396
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13			\$60,529		
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$22,074
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$37,793		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$16,351
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$4,088
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$7,129
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$20,965				
TOTAL EXPENDED BY YEAR				\$384,961	\$57,387	\$233,833	\$32,246	\$429,683
CARRY OVER RESERVES				\$772,639	\$628,622	\$821,712	\$850,803	\$1,095,048
ANNUAL RESERVE CONTRIB				\$220,235	\$229,045	\$238,206	\$247,735	\$257,644
RESERVE EXPENDITURES				\$384,961	\$57,387	\$233,833	\$32,246	\$429,683
ACCUMULATED RESERVES				\$607,913	\$800,279	\$826,086	\$1,066,292	\$923,010
INTEREST EARNED				\$20,708	\$21,434	\$24,717	\$28,756	\$30,271
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$628,622	\$821,712	\$850,803	\$1,095,048	\$953,280
YEARS	0-1	2-10	11-30	11 (2030)	12 (2031)	13 (2032)	14 (2033)	15 (2034)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	140%	145%	151%	157%	164%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT.	NEXT	16	17	18	19	20
#	COMPONENT NAME	CYCLE	MAINT.	2035	2036	2037	2038	2039
Stn.51 2.4.1	Concrete - Paving Repairs	10	1					
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3			\$3,035		
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					
Stn.51 2.9.1	Landscaping - Maintenance	8	8	\$25,507				
Stn.51 3.3.1	Concrete Walkways - Repair	6	3					
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$12,195
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$10,520	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$24,407	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$6,584		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3					
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6			\$14,714		
Stn.51 9.6.4	Fiber Cement Board Siding - Caulk & Paint	8	1		\$37,475			
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16	\$3,741				
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$9,196		
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$29,840
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$7,440
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16	\$117,146				
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17		\$24,352			
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$10,941
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$9,947
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					\$20,490
Stn.51 15.3.2	Storm Water System - Contingency	3	3			\$9,196		
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$4,973



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS
PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	16 2035	17 2036	18 2037	19 2038	20 2039
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16	\$22,446				
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6			\$35,553		
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$9,947
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$15,159
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$9,947
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1				\$7,728	
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1				\$9,660	
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					\$8,514
Stn.57 2.9.2	Landscaping - Maintenance	8	8	\$8,502				
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4	\$5,442				
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					\$2,984
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$5,306			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					\$109,413
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$38,294
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18			\$55,177		
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$25,290		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$6,565
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7				\$16,833	
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					\$29,840
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16	\$51,014				
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$19,893
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$8,502				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$4,973
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$10,941
Stn.57 15.5.2	Water Heater - Replace	15	4				\$15,149	
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6	\$23,382				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$9,947
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$8,673
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					\$17,506
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2		\$4,863			
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$265,683	\$71,996	\$158,745	\$84,298	\$398,422
CARRY OVER RESERVES				\$953,280	\$984,179	\$1,223,477	\$1,393,217	\$1,655,380
ANNUAL RESERVE CONTRIB				\$267,950	\$278,668	\$289,815	\$301,407	\$313,463
RESERVE EXPENDITURES				\$265,683	\$71,996	\$158,745	\$84,298	\$398,422
ACCUMULATED RESERVES				\$955,547	\$1,190,851	\$1,354,546	\$1,610,326	\$1,570,421
INTEREST EARNED				\$28,632	\$32,625	\$38,670	\$45,053	\$48,387
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$984,179	\$1,223,477	\$1,393,217	\$1,655,380	\$1,618,808
YEARS	0-1	2-10	11-30	16 (2035)	17 (2036)	18 (2037)	19 (2038)	20 (2039)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	170%	177%	184%	191%	199%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51 2.4.1	Concrete - Paving Repairs	10	1	\$37,633				
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1	\$3,455				
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21	\$151,050				
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					\$17,668
Stn.51 2.7.3	Gate Operator - Maintenance	3	3	\$3,414			\$3,840	
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					\$5,325
Stn.51 2.9.1	Landscaping - Maintenance	8	8				\$34,908	
Stn.51 3.3.1	Concrete Walkways - Repair	6	3	\$11,275				
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6	\$32,833				
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6	\$5,172				
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21	\$3,786				
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21	\$8,193				
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1	\$12,703				
Stn.51 6.4.4	Metal Siding - Replace	35	26					
Stn.51 7.1.1	Sealant Joints - Replace	15	6	\$46,426				
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21	\$7,386				
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21	\$391,911				
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21	\$258,240				
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21	\$2,503				
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$14,837
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$12,800	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21	\$50,067				
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$29,695	
Stn.51 8.2.4	Colling Door - Maintenance	30	21	\$20,482				
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$8,011		
Stn.51 8.3.1	Storefront System - Maintenance	15	6	\$15,868				
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3	\$45,267				
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3					
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6				\$18,618	
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					\$51,287
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1	\$5,172				
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8					
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$36,305
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$9,052
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3					
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3					
Stn.51 11.8.1	Air Compressor System - Replace	15	6	\$18,206				
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7			\$38,757		
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					\$19,363
Stn.51 12.1.5	Admin Offices - Refurbish	16	7			\$55,943		
Stn.51 12.1.6	Lobby - Refurbish	15	8			\$44,754		
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3					
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					\$33,328
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					\$59,903
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1	\$20,689				
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1	\$4,138				
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6	\$12,413				
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1	\$34,137				
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7			\$54,914		
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6	\$5,607				
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6	\$85,694				
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3					
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$13,312
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$12,102
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					
Stn.51 15.3.2	Storm Water System - Contingency	3	3	\$10,344			\$11,636	
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$6,051



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	21 2040	22 2041	23 2042	24 2043	25 2044
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6	\$16,551				
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6				\$44,985	
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$12,102
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$18,443
Stn.51 16.3.1	Electrical System - Contingency	10	10					
Stn.51 16.5.1	Emergency Generator - Replace	30	21	\$40,964				
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21	\$18,206				
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1	\$20,689				
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6	\$159,305				
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1	\$20,689				
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1	\$33,102				
Stn.57 2.6.1	Asphalt Paving - Repair	6	1					\$9,778
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1					\$12,223
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					\$14,691
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8				\$11,636	
Stn.57 2.9.3	Wetland - Maintenance	15	15					
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4		\$6,885			
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$6,455			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					\$8,035
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4				\$5,236	
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12					
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$30,769		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$7,987
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					\$96,910
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26					
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					\$32,674
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3			\$55,943		
Stn.57 12.3.5	Kitchen - Remodel	10	5					\$24,203
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7		\$4,303			
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					
Stn.57 15.2.3	Plumbing System - Contingency	10	6					\$6,051
Stn.57 15.3.3	Irrigation System - Contingency	5	5					
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7		\$10,758			
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8			\$24,615		
Stn.57 15.6.8	Furnace - Replace	10	6					
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$10,553
Stn.57 16.3.2	Electrical System - Contingency	20	10					
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1	\$31,033				
TOTAL EXPENDED BY YEAR				\$1,644,608	\$28,402	\$313,706	\$173,355	\$532,179
CARRY OVER RESERVES				\$1,618,808	\$328,987	\$654,157	\$713,263	\$930,914
ANNUAL RESERVE CONTRIB				\$326,002	\$339,042	\$352,604	\$366,708	\$381,376
RESERVE EXPENDITURES				\$1,644,608	\$28,402	\$313,706	\$173,355	\$532,179
ACCUMULATED RESERVES				\$300,202	\$639,627	\$693,055	\$906,615	\$780,110
INTEREST EARNED				\$28,785	\$14,529	\$20,208	\$24,298	\$25,665
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$328,987	\$654,157	\$713,263	\$930,914	\$805,776
YEARS	0-1	2-10	11-30	21 (2040)	22 (2041)	23 (2042)	24 (2043)	25 (2044)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	207%	215%	224%	233%	242%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19		MAINT.	NEXT	26	27	28	29	30
#	COMPONENT NAME	CYCLE	MAINT.	2045	2046	2047	2048	2049
Stn.51 2.4.1	Concrete - Paving Repairs	10	1					
Stn.51 2.4.2	Concrete - Repaint Stalls & Curbs	10	1					
Stn.51 2.7.1	Prefinished Metal Fence - Replace	30	21					
Stn.51 2.7.2	Prefinished Metal Fence & Gates - Maintenance	10	5					
Stn.51 2.7.3	Gate Operator - Maintenance	3	3		\$4,319			\$4,859
Stn.51 2.8.1	Wood Benches - Maintenance	10	5					
Stn.51 2.9.1	Landscaping - Maintenance	8	8					
Stn.51 3.3.1	Concrete Walkways - Repair	6	3		\$14,267			
Stn.51 3.3.2	Cast Concrete Retaining Walls - Repair	15	6					
Stn.51 6.1.1	Garbage Bin Enclosure - Repair	15	6					
Stn.51 6.2.1	Pedestal Paver - Maintenance	30	21					
Stn.51 6.2.2	PVC Thermoplastic Membrane - Replace	30	21					
Stn.51 6.4.1	Brick Siding - Maintenance	20	11					
Stn.51 6.4.2	CMU Wall - Tuck Point	20	11					
Stn.51 6.4.3	Fiber Cement Board Siding - Repair	10	1					
Stn.51 6.4.4	Metal Siding - Replace	35	26	\$103,655				
Stn.51 7.1.1	Sealant Joints - Replace	15	6					
Stn.51 7.3.1	Scuppers, Gutters & Downspouts - Replace	30	21					
Stn.51 7.4.1	Low Sloped Ribbed Roof - Replace	30	21					
Stn.51 7.4.2	Low Sloped Smooth Roof - Replace	30	21					
Stn.51 7.4.3	Tower Composition Shingles - Replace	30	21					
Stn.51 7.4.4	Tower Metal Roof - Replace	50	41					
Stn.51 7.4.5	Apparatus Bay Metal Roof - Replace	40	31					
Stn.51 7.4.6	Roof Inspection & Minor Repair	5	5					\$18,051
Stn.51 8.2.1	Folding Bay Doors & Hardware - Maintenance	5	4				\$15,573	
Stn.51 8.2.2	Overhead Bay Doors & Hardware - Replace	30	21					
Stn.51 8.2.3	Overhead Bay Door Operator - Contingency	5	4				\$36,129	
Stn.51 8.2.4	Coiling Door - Maintenance	30	21					
Stn.51 8.2.5	Doors & Hardware - Maintenance	5	3			\$9,747		
Stn.51 8.3.1	Storefront System - Maintenance	15	6					
Stn.51 8.3.2	Storefront System - Replace	60	52					
Stn.51 8.5.1	Aluminum Windows - Replace	40	31					
Stn.51 9.8.1	Cedar Wood Siding - Maintenance	6	3		\$57,278			
Stn.51 9.8.2	Concrete Siding - Maintenance	12	3		\$13,246			
Stn.51 9.8.3	Exterior Steel - Maintenance	6	6					\$23,557
Stn.51 9.8.4	Fiber Cement Board Siding - Caulk & Paint	8	1					
Stn.51 10.4.1	Exterior Signage - Refurbish	10	1					
Stn.51 10.5.1	Exterior Mail Pedestal Unit - Replace	25	16					
Stn.51 11.1.1	Propane Forklift - Replace	20	10					\$64,783
Stn.51 11.4.1	Admin Kitchen Equipment - Contingency	10	8			\$13,613		
Stn.51 11.4.2	Duty Crew Kitchen Equipment - Contingency	5	5					\$44,170
Stn.51 11.6.1	Laundry Equipment - Contingency	5	5					\$11,013
Stn.51 11.6.2	Unimac Gear Extractor - Replace	12	3		\$23,037			
Stn.51 11.6.3	Ramair Gear Dryer - Replace	12	3		\$28,796			
Stn.51 11.8.1	Air Compressor System - Replace	15	6					
Stn.51 12.1.1	Apparatus Bay - Refurbish	25	16					
Stn.51 12.1.2	Admin Common Areas - Repaint	16	7					
Stn.51 12.1.3	Exercise Room - Refurbish	20	11					
Stn.51 12.1.4	Bunk Gear Storage - Refurbish	10	5					
Stn.51 12.1.5	Admin Offices - Refurbish	16	7					
Stn.51 12.1.6	Lobby - Refurbish	15	8					
Stn.51 12.1.7	Public Meeting Room - Refurbish	12	3		\$39,267			
Stn.51 12.1.8	Public & Admin Restrooms - Refurbish	20	11					
Stn.51 12.2.1	Duty Crew Common Areas - Full Repaint	16	9					
Stn.51 12.2.2	Duty Crew Common Areas - Touchup Paint	16	17					
Stn.51 12.2.3	Duty Crew Sleep Room Interiors - Refurbish	10	5					
Stn.51 12.2.4	Duty Crew Kitchen Interiors - Refurbish	10	1					
Stn.51 12.2.5	Duty Crew Laundry Interiors - Refurbish	10	1					
Stn.51 12.2.6	Duty Crew Office/Training Areas - Refurbish	15	6					
Stn.51 12.2.7	Duty Crew Restrooms - Refurbish	10	1					
Stn.51 12.4.1	1st Floor Interior Carpet Flooring - Replace	24	15					
Stn.51 12.4.2	2nd Floor Interior Carpet Flooring - Replace	16	7					
Stn.51 12.4.3	1st Floor Resilient Flooring - Replace	20	11					
Stn.51 12.4.4	2nd Floor Resilient Flooring - Replace	15	6					
Stn.51 12.4.5	1st Floor Sheet Flooring - Replace	20	11					
Stn.51 12.4.6	2nd Floor Sheet Flooring - Replace	15	6					
Stn.51 12.4.7	1st Floor Stained Concrete - Refurbish	12	3		\$39,660			
Stn.51 12.6.1	Elevator Cab Interior - Remodel	40	31					
Stn.51 14.1.1	Elevator - Major Upgrades	40	31					
Stn.51 14.1.2	Elevators - 5 Year Load Test	5	5					\$16,196
Stn.51 15.2.1	Plumbing System - Contingency	5	5					\$14,723
Stn.51 15.2.2	Plumbing Supply Lines - Replace	60	51					
Stn.51 15.3.1	Irrigation System - Contingency	10	10					\$30,330
Stn.51 15.3.2	Storm Water System - Contingency	3	3		\$13,089			\$14,723
Stn.51 15.4.1	Fire Detection System - Maintenance	5	5					\$7,362



Northshore Fire Department

Reserve Study Projections at Recommended Funding of \$162,300

Reserve Consultants LLC

30-YEAR SPREADSHEET WITH INFLATED DOLLARS

PER YEAR EXPENSES IN 2019 DOLLARS

05-Dec-19

#	COMPONENT NAME	MAINT. CYCLE	NEXT MAINT.	26 2045	27 2046	28 2047	29 2048	30 2049
Stn.51 15.4.2	Fire Sprinkler System - Maintenance	15	6					
Stn.51 15.5.1	Water Heater - Contingency	20	11					
Stn.51 15.6.1	Heat Recovery Unit - Replace	25	16					
Stn.51 15.6.2	Indirect Makeup AHU - Replace	20	11					
Stn.51 15.6.3	Furnace - Replace	20	11					
Stn.51 15.6.4	VRF Heat Pump - Contingency	6	6					\$56,921
Stn.51 15.6.5	HVAC System - Contingency	5	5					\$14,723
Stn.51 15.6.6	Infrared Heaters - Replace	20	11					
Stn.51 15.7.1	Exhaust Fans - Contingency	5	5					\$22,439
Stn.51 16.3.1	Electrical System - Contingency	10	10					\$14,723
Stn.51 16.5.1	Emergency Generator - Replace	30	21					
Stn.51 16.5.2	Generator Fuel Tank - Replace	30	21					
Stn.51 16.6.1	Exterior Light Fixtures - Replace	10	1					
Stn.51 16.8.1	Fire Control Panel - Replace	20	11					
Stn.51 16.9.1	Audio/Visual Equipment - Upgrades	15	6					
Stn.51 17.1.1	Fireblast 451 - Maintenance	10	1					
Stn.51 18.1.1	Security / Surveillance System - Replace	10	1					
Stn.57 2.6.1	Asphalt Paving - Repair	6	1					
Stn.57 2.6.2	Asphalt Pavement- Seal Coat & Restripe	6	1					
Stn.57 2.7.4	Privacy Wood Fence - Replace	15	10					
Stn.57 2.7.5	Chain-link Fence - Repair	40	20					
Stn.57 2.9.2	Landscaping - Maintenance	8	8					
Stn.57 2.9.3	Wetland - Maintenance	15	15					\$29,447
Stn.57 3.3.3	Exterior Concrete Paving - Repair	6	4			\$8,712		
Stn.57 6.1.2	Garbage Bin Enclosure - Contingency	20	20					
Stn.57 6.4.5	Brick Siding - Maintenance	20	10					\$37,780
Stn.57 7.3.2	Gutters & Downspouts - Replace	20	13					
Stn.57 7.4.7	Metal Roof - Replace	40	13					
Stn.57 7.4.8	Roof Inspection & Minor Repair	5	2		\$7,853			
Stn.57 8.2.8	Common Doors & Hardware - Maintenance	10	5					
Stn.57 8.2.6	Overhead Bay Door - Replace	20	10					\$16,785
Stn.57 8.2.7	Bay Door Operator - Contingency	20	20					
Stn.57 8.3.3	Storefront System - Maintenance	10	10					\$56,685
Stn.57 8.5.2	Aluminum Framed Windows - Replace	45	18					
Stn.57 9.8.5	Front Entry Steel Framed Structure - Paint	10	4					
Stn.57 10.4.2	Exterior Signage - Refurbish	15	12		\$6,545			
Stn.57 11.4.3	Kitchen Equipment - Contingency	5	8			\$37,435		
Stn.57 11.6.4	Laundry Equipment - Contingency	5	5					\$9,717
Stn.57 11.6.5	Station Extractor - Bunker Gear Washer	12	7					
Stn.57 11.8.2	Air Compressor - Replace	12	13					
Stn.57 12.3.1	Interior Concrete Floor - Refurbish	25	26	\$19,885				
Stn.57 12.3.2	Apparatus Bay - Refurbish	10	5					
Stn.57 12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	25	5					\$20,613
Stn.57 12.3.4	Front Reception Desk & Office - Remodel	10	3					
Stn.57 12.3.5	Kitchen - Remodel	10	5					
Stn.57 12.3.6	Day / Dining Room - Remodel	15	5					
Stn.57 12.3.7	Duty Crew Sleep Rooms - Refurbish	20	10					\$14,723
Stn.57 12.3.8	Exercise Room - Refurbish	15	16					
Stn.57 12.3.9	Locker & Restroom - Refurbish	15	7					
Stn.57 12.3.10	Laundry & Utility Room - Refurbish	10	10					\$29,447
Stn.57 15.2.3	Plumbing System - Contingency	10	6	\$12,586				
Stn.57 15.3.3	Irrigation System - Contingency	5	5					\$7,362
Stn.57 15.4.3	Fire Detection System - Maintenance	15	7					
Stn.57 15.4.4	Wet & Dry Fire Sprinkler System - Contingency	10	10					\$16,196
Stn.57 15.5.2	Water Heater - Replace	15	4					
Stn.57 15.6.7	HVAC Units - Replace	15	8					
Stn.57 15.6.8	Furnace - Replace	10	6	\$34,611				
Stn.57 15.6.9	Infrared Overhead Heaters - Replace	10	10					\$14,723
Stn.57 15.7.2	Exhaust Fans - Contingency	5	5					\$12,839
Stn.57 16.3.2	Electrical System - Contingency	20	10					\$19,435
Stn.57 16.5.3	Emergency Generator - Contingency	20	20					
Stn.57 16.6.2	Exterior Light Fixtures - Replace	15	2					
Stn.57 16.8.2	Fire Control Panel - Replace	20	10					\$11,337
Stn.57 18.1.2	Security / Surveillance System - Upgrade	10	1					
TOTAL EXPENDED BY YEAR				\$170,737	\$247,357	\$69,506	\$51,702	\$655,664
CARRY OVER RESERVES				\$805,776	\$1,059,232	\$1,258,625	\$1,661,266	\$2,111,476
ANNUAL RESERVE CONTRIB				\$396,631	\$412,497	\$428,996	\$446,156	\$464,003
RESERVE EXPENDITURES				\$170,737	\$247,357	\$69,506	\$51,702	\$655,664
ACCUMULATED RESERVES				\$1,031,670	\$1,224,371	\$1,618,115	\$2,055,721	\$1,919,814
INTEREST EARNED				\$27,562	\$34,254	\$43,151	\$55,755	\$60,469
SPECIAL ASSESSMENT								
YEAR-END BALANCE				\$1,059,232	\$1,258,625	\$1,661,266	\$2,111,476	\$1,980,284
YEARS	0-1	2-10	11-30	26 (2045)	27 (2046)	28 (2047)	29 (2048)	30 (2049)
CONTRIBUTION INFLATION	0%	3%	4%	4%	4%	4%	4%	4%
COMPONENT COMPOUND INFLATION	3%	3%	4%	252%	262%	272%	283%	294%
INTEREST RATE MULTIPLIER	2%	2%	3%	3%	3%	3%	3%	3%

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30 Year Summary at the Recommended Starting Funding of \$162,300 Using Inflated Dollar Values

Inflation & Interest Assumptions

	Inflation	Interest
Years 0-1	0%	2%
Years 2-10	3%	2%
Years 11-30	4%	3%

Risk of Special Assessment

Nominal Risk	100% and above
Low Risk	70% 99%
Moderate Risk	25% to 69%
Highest Risk	0% to 24%

Fiscal Year End	Fiscal Year Beginning Reserve Balance	Recommended Annual Reserve Contribution	Average Contribution per Unit per Month	Projected Reserve Expenditures	Projected Interest Earned	Fiscal Year End Reserve Balance	Projected Fully Funded Balance	% Funded
1 (2020)	\$159,998	\$162,300	\$13,525	(\$142,428)	\$3,399	\$183,268	\$901,953	20%
2 (2021)	\$183,268	\$167,169	\$13,931	(\$6,100)	\$5,276	\$349,613	\$1,074,839	33%
3 (2022)	\$349,613	\$172,184	\$14,349	(\$128,472)	\$7,429	\$400,754	\$1,138,656	35%
4 (2023)	\$400,754	\$177,350	\$14,779	(\$35,600)	\$9,433	\$551,936	\$1,302,248	42%
5 (2024)	\$551,936	\$182,670	\$15,223	(\$175,885)	\$11,107	\$569,828	\$1,339,469	43%
6 (2025)	\$569,828	\$188,150	\$15,679	(\$292,710)	\$10,351	\$475,619	\$1,269,452	37%
7 (2026)	\$475,619	\$193,795	\$16,150	(\$116,531)	\$10,285	\$563,168	\$1,373,602	41%
8 (2027)	\$563,168	\$199,609	\$16,634	(\$92,892)	\$12,331	\$682,215	\$1,509,202	45%
9 (2028)	\$682,215	\$205,597	\$17,133	(\$113,776)	\$14,563	\$788,598	\$1,634,132	48%
10 (2029)	\$788,598	\$211,765	\$17,647	(\$243,182)	\$15,458	\$772,639	\$1,642,877	47%
11 (2030)	\$772,639	\$220,235	\$18,353	(\$384,961)	\$20,708	\$628,622	\$1,538,496	41%
12 (2031)	\$628,622	\$229,045	\$19,087	(\$57,387)	\$21,434	\$821,712	\$1,756,118	47%
13 (2032)	\$821,712	\$238,206	\$19,851	(\$233,833)	\$24,717	\$850,803	\$1,819,610	47%
14 (2033)	\$850,803	\$247,735	\$20,645	(\$32,246)	\$28,756	\$1,095,048	\$2,090,170	52%
15 (2034)	\$1,095,048	\$257,644	\$21,470	(\$429,683)	\$30,271	\$953,280	\$1,994,853	48%
16 (2035)	\$953,280	\$267,950	\$22,329	(\$265,683)	\$28,632	\$984,179	\$2,064,477	48%
17 (2036)	\$984,179	\$278,668	\$23,222	(\$71,996)	\$32,625	\$1,223,477	\$2,334,842	52%
18 (2037)	\$1,223,477	\$289,815	\$24,151	(\$158,745)	\$38,670	\$1,393,217	\$2,542,107	55%
19 (2038)	\$1,393,217	\$301,407	\$25,117	(\$84,298)	\$45,053	\$1,655,380	\$2,840,661	58%
20 (2039)	\$1,655,380	\$313,463	\$26,122	(\$398,422)	\$48,387	\$1,618,808	\$2,857,331	57%
21 (2040)	\$1,618,808	\$326,002	\$27,167	(\$1,644,608)	\$28,785	\$328,987	\$1,676,373	20%
22 (2041)	\$328,987	\$339,042	\$28,254	(\$28,402)	\$14,529	\$654,157	\$2,029,367	32%
23 (2042)	\$654,157	\$352,604	\$29,384	(\$313,706)	\$20,208	\$713,263	\$2,132,027	33%
24 (2043)	\$713,263	\$366,708	\$30,559	(\$173,355)	\$24,298	\$930,914	\$2,388,098	39%
25 (2044)	\$930,914	\$381,376	\$31,781	(\$532,179)	\$25,665	\$805,776	\$2,319,603	35%
26 (2045)	\$805,776	\$396,631	\$33,053	(\$170,737)	\$27,562	\$1,059,232	\$2,613,389	41%
27 (2046)	\$1,059,232	\$412,497	\$34,375	(\$247,357)	\$34,254	\$1,258,625	\$2,859,209	44%
28 (2047)	\$1,258,625	\$428,996	\$35,750	(\$69,506)	\$43,151	\$1,661,266	\$3,302,791	50%
29 (2048)	\$1,661,266	\$446,156	\$37,180	(\$51,702)	\$55,755	\$2,111,476	\$3,797,269	56%
30 (2049)	\$2,111,476	\$464,003	\$38,667	(\$655,664)	\$60,469	\$1,980,284	\$3,741,657	53%

Note: The long term nature of this study requires that certain assumptions and predictions be made about future events. Since there can be no guarantee that these future events will occur as assumed, this analysis must be viewed in light of the circumstances under which it was conducted. Reasonable effort has been made to ensure that the conclusions of this report are based on reliable information and sound reasoning.



FULLY FUNDED BALANCE CALCULATIONS

RCW 64.90.550 (2)(j) states that a reserve study shall include: "A projected reserve account balance for thirty years based on each funding plan presented in the reserve study". Furthermore, RCW 64.90.550 (2)(e) the reserve study shall include "The percentage of the fully funded balance to which the reserve account is funded".

"Fully funded balance" means the current value of the deteriorated portion, not the total replacement value, of all the reserve components. The fully funded balance for each reserve component is calculated by multiplying the current replacement cost of that reserve component by its effective age, then dividing the result by that reserve component's useful life.

The sum total of all reserve components' fully funded balances is the organization's fully funded balance, as defined by RCW 64.90.010 (26).

$$FFB = \text{the sum of } \frac{\text{replacement cost} * \text{effective age}}{\text{useful life}} \text{ for all reserve components}$$

The **percent fully funded** relates to how much the building has deteriorated, or been used up, compared to the cost of making it new again. Another way of thinking of this is the percent fully funded illustrates how much you should have saved thus far to pay for the future replacement of a component, based on the replacement cost and how many years you have to save.

Example of how it works: A Roof Replacement

SCENARIO	ANALYSIS
<p>If you have a roof that will last 10 years and cost \$100,000 to replace:</p> <ul style="list-style-type: none"> To pay for the future replacement in 10 years, you should save \$10,000 each year to have enough money to cover the replacement cost. When it is 2 years old, it is 20% used up, and the Fully Funded Balance for its future replacement is \$20,000. If you have saved \$10,000 for the future replacement in 2 years, you are 50% fully funded. If you have saved \$20,000, you are 100% fully funded. When the roof is 8 years old it will be 80% deteriorated, and its Fully Funded Balance would be \$80,000. If you have saved only \$10,000 by Year 8 you are 13% fully funded. If you have saved \$20,000, you are at 25%, and at \$80,000 you are at 100% fully funded. 	<ul style="list-style-type: none"> A. In effect, the percent fully funded is a measure of how well an organization can withstand the risk of unexpected expenses. Such unexpected expenses include: emergency expenses not covered by insurance, expenses that are higher than predicted, and expenses that are required earlier than anticipated. B. A higher percent funded means more money is in the bank, and that lowers the risk of special assessment when unexpected expenses occur. A poorly funded organization would have less money available for unexpected expenses, and a higher risk of a special assessment to generate the needed funds. C. By looking at cash flow demands we are able to determine how much money is needed to fund anticipated replacement and maintenance of the reserve components and recommend a steady contribution over the 30 year span of the study. Budgeting to maintain a minimum balance, or threshold, helps to ensure that a special assessment will not be required if an unexpected expense arises.



We typically recommend that an organization select a minimum reserve account balance (or Threshold) it wants to maintain and select a contribution rate to maintain that minimum rather than try to build their account to 100% fully funded.

We usually recommend that an organization consider a threshold equal to the recommended annual reserve contribution because this is the average maintenance expense over the thirty years. However, each organization must judge their unique risk tolerance.

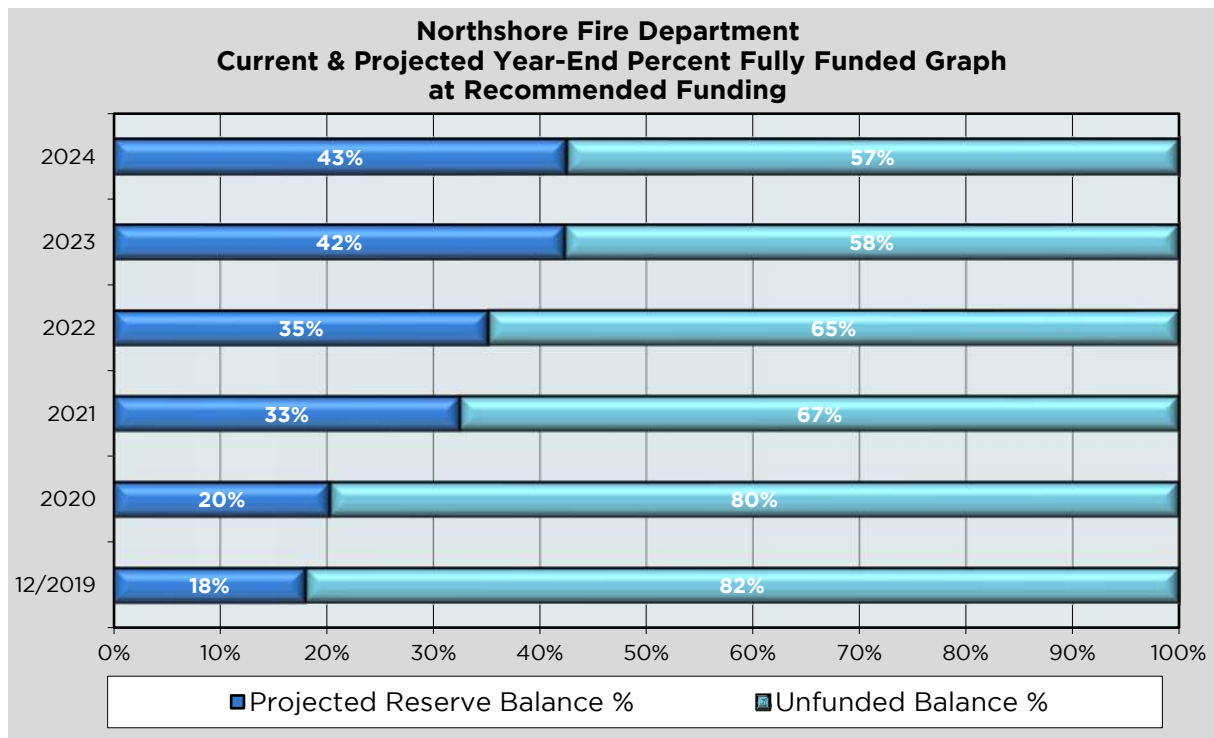
The Fully Funded Balance for Northshore Fire Department is \$942,417. The actual current funding is \$170,000. The Organization is approximately 18% funded.

This means that based on a straight line savings for each reserve component, the Organization saved 18% of the accumulated depreciation of the reserve components.

At 18%, Northshore Fire Department is considered to be at **high risk for a special assessment**.

% Funded	Special Assessment Risk Level
100% +	Nominal Risk
70% to 99%	Low Risk
25% to 69%	Moderate Risk
24% or less	High Risk

Below is a graph with the current and projected year-end percent fully funded calculated at the recommended starting annual reserve contribution of \$162,300.





Deficit or Surplus in Reserve Funding

RCW 64.90.550 §2(l) requires that the reserve study include the amount of any current deficit or surplus in reserve funding expressed on a dollars per unit basis. This is calculated by subtracting the association's reserve account balance as of the date of the study from the fully funded balance, and then multiplying the result by the fraction or percentage of the common expenses of the association allocable to each unit.

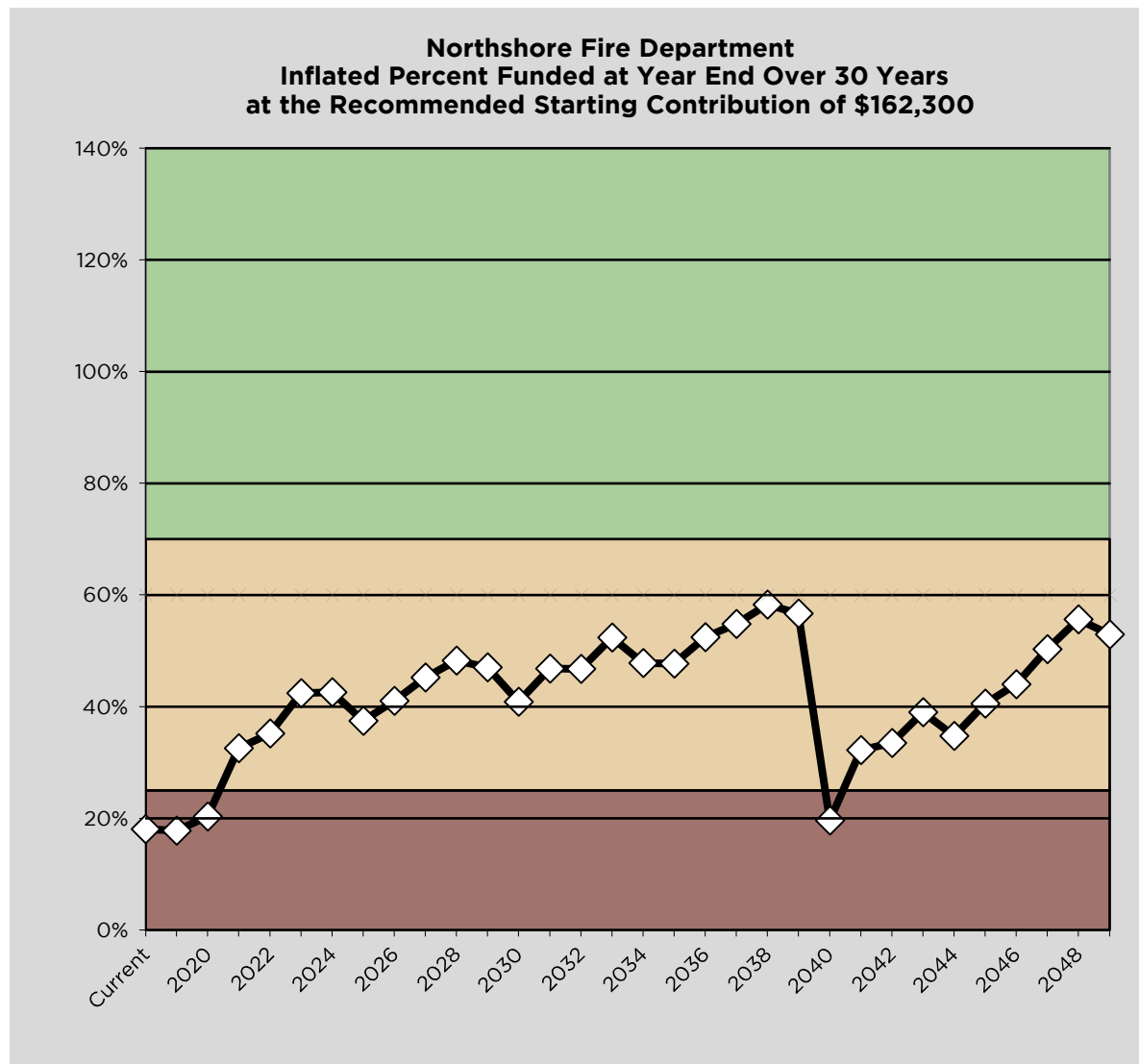
Since Northshore Fire Department is a single entity, we simply show the difference between the reserve account balance and the current fully funded balance.

Reserve Account Balance as of January 1, 2019	\$170,000
Current Fully Funded Balance	\$942,417
Reserve Fund (Deficit)	(\$772,417)



Inflated Percent Funded at Year End Over 30 Years

The following graph illustrates the projected percent funded at year end over the next 30 years at the recommended starting contribution rate of \$162,300. The chart includes inflated values, interest, and special assessments (if applicable).





FULLY FUNDED BALANCE CALCULATION TABLE



Fully Funded Balance Calculations

Northshore Fire Department

$FFB = \text{the sum of } \frac{\text{replacement cost} * \text{effective age}}{\text{useful life}} \text{ for all reserve components}$

Component Description					Quantity	Unit	Maintenance Cycle (Useful Life)	Remaining Useful Life	Effective Age	Current Replacement Cost	Fully Funded Balance
3%	Stn.51	2.4.1	Concrete - Paving Repairs		65610	SF	10	1	9	\$18,190	\$16,371
100%	Stn.51	2.4.2	Concrete - Repaint Stalls & Curbs		76	EA	10	1	9	\$1,670	\$1,503
100%	Stn.51	2.7.1	Prefinished Metal Fence - Replace		885	LF	30	21	9	\$73,010	\$21,903
10%	Stn.51	2.7.2	Prefinished Metal Fence & Gates - Maintenance		885	LF	10	5	5	\$7,300	\$3,650
100%	Stn.51	2.7.3	Gate Operator - Maintenance		1	EA	3	3	-	\$1,650	\$0
100%	Stn.51	2.8.1	Wood Benches - Maintenance		4	EA	10	5	5	\$2,200	\$1,100
100%	Stn.51	2.9.1	Landscaping - Maintenance		1	LS	8	8	-	\$15,000	\$0
10%	Stn.51	3.3.1	Concrete Walkways - Repair		5700	SF	6	3	3	\$5,450	\$2,725
5%	Stn.51	3.3.2	Cast Concrete Retaining Walls - Repair		740	LF	15	6	9	\$15,870	\$9,522
100%	Stn.51	6.1.1	Garbage Bin Enclosure - Repair		1	EA	15	6	9	\$2,500	\$1,500
25%	Stn.51	6.2.1	Pedestal Paver - Maintenance		180	SF	30	21	9	\$1,830	\$549
100%	Stn.51	6.2.2	PVC Thermoplastic Membrane - Replace		180	SF	30	21	9	\$3,960	\$1,188
5%	Stn.51	6.4.1	Brick Siding - Maintenance		7010	SF	20	11	9	\$9,640	\$4,338
100%	Stn.51	6.4.2	CMU Wall - Tuck Point		6515	SF	20	11	9	\$53,750	\$24,188
3%	Stn.51	6.4.3	Fiber Cement Board Siding - Repair		6420	SF	10	1	9	\$6,140	\$5,526
100%	Stn.51	6.4.4	Metal Siding - Replace		2340	SF	35	26	9	\$41,180	\$10,589
100%	Stn.51	7.1.1	Sealant Joints - Replace		1700	LF	15	6	9	\$22,440	\$13,464
100%	Stn.51	7.3.1	Scuppers, Gutters & Downspouts - Replace		560	LF	30	21	9	\$3,570	\$1,071
100%	Stn.51	7.4.1	Low Sloped Ribbed Roof - Replace		101	SQ	30	21	9	\$189,430	\$56,829
100%	Stn.51	7.4.2	Low Sloped Smooth Roof - Replace		95	SQ	30	21	9	\$124,820	\$37,446
100%	Stn.51	7.4.3	Tower Composition Shingles - Replace		2	SQ	30	21	9	\$1,210	\$363
100%	Stn.51	7.4.4	Tower Metal Roof - Replace		6	SQ	50	41	9	\$5,150	\$927
100%	Stn.51	7.4.5	Apparatus Bay Metal Roof - Replace		19	SQ	40	31	9	\$16,300	\$3,668
5%	Stn.51	7.4.6	Roof Inspection & Minor Repair		223	SQ	5	5	-	\$6,130	\$0
10%	Stn.51	8.2.1	Folding Bay Doors & Hardware - Maintenance		5	EA	5	4	1	\$5,500	\$1,100
100%	Stn.51	8.2.2	Overhead Bay Doors & Hardware - Replace		4	EA	30	21	9	\$24,200	\$7,260
100%	Stn.51	8.2.3	Overhead Bay Door Operator - Contingency		4	EA	5	4	1	\$12,760	\$2,552
100%	Stn.51	8.2.4	Coiling Door - Maintenance		2	EA	30	21	9	\$9,900	\$2,970
100%	Stn.51	8.2.5	Doors & Hardware - Maintenance		5	EA	5	3	2	\$3,580	\$1,432
20%	Stn.51	8.3.1	Storefront System - Maintenance		420	SF	15	6	9	\$7,670	\$4,602
100%	Stn.51	8.3.2	Storefront System - Replace		420	SF	60	52	8	\$38,350	\$5,113
100%	Stn.51	8.5.1	Aluminum Windows - Replace		2620	SF	40	31	9	\$172,920	\$38,907
100%	Stn.51	9.8.1	Cedar Wood Siding - Maintenance		1530	SF	6	3	3	\$21,880	\$10,940
100%	Stn.51	9.8.2	Concrete Siding - Maintenance		920	SF	12	3	9	\$5,060	\$3,795
100%	Stn.51	9.8.3	Exterior Steel - Maintenance		1	LS	6	6	-	\$8,000	\$0
100%	Stn.51	9.8.4	Fiber Cement Board Siding - Caulk & Paint		6420	SF	8	1	7	\$21,190	\$18,541
100%	Stn.51	10.4.1	Exterior Signage - Refurbish		1	LS	10	1	9	\$2,500	\$2,250
100%	Stn.51	10.5.1	Exterior Mail Pedestal Unit - Replace		1	EA	25	16	9	\$2,200	\$792
100%	Stn.51	11.1.1	Propane Forklift - Replace		1	EA	20	10	10	\$22,000	\$11,000
100%	Stn.51	11.4.1	Admin Kitchen Equipment - Contingency		1	LS	10	8	2	\$5,000	\$1,000
100%	Stn.51	11.4.2	Duty Crew Kitchen Equipment - Contingency		1	LS	5	5	-	\$15,000	\$0
100%	Stn.51	11.6.1	Laundry Equipment - Contingency		4	EA	5	5	-	\$3,740	\$0
100%	Stn.51	11.6.2	Unimac Gear Extractor - Replace		1	EA	12	3	9	\$8,800	\$6,600
100%	Stn.51	11.6.3	Ramair Gear Dryer - Replace		1	EA	12	3	9	\$11,000	\$8,250
100%	Stn.51	11.8.1	Air Compressor System - Replace		1	EA	15	6	9	\$8,800	\$5,280
100%	Stn.51	12.1.1	Apparatus Bay - Refurbish		12525	SF	25	16	9	\$68,890	\$24,800
100%	Stn.51	12.1.2	Admin Common Areas - Repaint		12115	SF	16	7	9	\$17,320	\$9,743
100%	Stn.51	12.1.3	Exercise Room - Refurbish		1	LS	20	11	9	\$3,000	\$1,350
100%	Stn.51	12.1.4	Bunk Gear Storage - Refurbish		1	LS	10	5	5	\$8,000	\$4,000
100%	Stn.51	12.1.5	Admin Offices - Refurbish		1	LS	16	7	9	\$25,000	\$14,063
100%	Stn.51	12.1.6	Lobby - Refurbish		1	LS	15	8	7	\$20,000	\$9,333
100%	Stn.51	12.1.7	Public Meeting Room - Refurbish		1	LS	12	3	9	\$15,000	\$11,250
100%	Stn.51	12.1.8	Public & Admin Restrooms - Refurbish		7	EA	20	11	9	\$19,250	\$8,663
100%	Stn.51	12.2.1	Duty Crew Common Areas - Full Repaint		9630	SF	16	9	7	\$13,770	\$6,024
100%	Stn.51	12.2.2	Duty Crew Common Areas - Touchup Paint		9630	SF	16	17	-	\$13,770	\$0



Fully Funded Balance Calculations

Northshore Fire Department

Continued

Component Description					Quantity	Unit	Maintenance Cycle (Useful Life)	Remaining Useful Life	Effective Age	Current Replacement Cost	Fully Funded Balance
100%	Stn.51	12.2.3	Duty Crew Sleep Room Interiors - Refurbish		9	EA	10	5	5	\$24,750	\$12,375
100%	Stn.51	12.2.4	Duty Crew Kitchen Interiors - Refurbish		1	LS	10	1	9	\$10,000	\$9,000
100%	Stn.51	12.2.5	Duty Crew Laundry Interiors - Refurbish		1	LS	10	1	9	\$2,000	\$1,800
100%	Stn.51	12.2.6	Duty Crew Office/Training Areas - Refurbish		1	LS	15	6	9	\$6,000	\$3,600
100%	Stn.51	12.2.7	Duty Crew Restrooms - Refurbish		6	EA	10	1	9	\$16,500	\$14,850
100%	Stn.51	12.4.1	1st Floor Interior Carpet Flooring - Replace		704	SY	24	15	9	\$34,080	\$12,780
100%	Stn.51	12.4.2	2nd Floor Interior Carpet Flooring - Replace		507	SY	16	7	9	\$24,540	\$13,804
100%	Stn.51	12.4.3	1st Floor Resilient Flooring - Replace		655	SF	20	11	9	\$2,310	\$1,040
100%	Stn.51	12.4.4	2nd Floor Resilient Flooring - Replace		770	SF	15	6	9	\$2,710	\$1,626
100%	Stn.51	12.4.5	1st Floor Sheet Flooring - Replace		1950	SF	20	11	9	\$32,180	\$14,481
100%	Stn.51	12.4.6	2nd Floor Sheet Flooring - Replace		2510	SF	15	6	9	\$41,420	\$24,852
100%	Stn.51	12.4.7	1st Floor Stained Concrete - Refurbish		510	SF	12	3	9	\$15,150	\$11,363
100%	Stn.51	12.6.1	Elevator Cab Interior - Remodel		1	LS	40	31	9	\$6,000	\$1,350
100%	Stn.51	14.1.1	Elevator - Major Upgrades		1	EA	40	31	9	\$125,000	\$28,125
100%	Stn.51	14.1.2	Elevators - 5 Year Load Test		1	LS	5	5	-	\$5,500	\$0
100%	Stn.51	15.2.1	Plumbing System - Contingency		1	LS	5	5	-	\$5,000	\$0
100%	Stn.51	15.2.2	Plumbing Supply Lines - Replace		1	LS	60	51	9	\$60,000	\$9,000
100%	Stn.51	15.3.1	Irrigation System - Contingency		12	ZN	10	10	-	\$10,300	\$0
100%	Stn.51	15.3.2	Storm Water System - Contingency		1	LS	3	3	-	\$5,000	\$0
100%	Stn.51	15.4.1	Fire Detection System - Maintenance		1	LS	5	5	-	\$2,500	\$0
100%	Stn.51	15.4.2	Fire Sprinkler System - Maintenance		1	LS	15	6	9	\$8,000	\$4,800
100%	Stn.51	15.5.1	Water Heater - Contingency		2	EA	20	11	9	\$16,280	\$7,326
100%	Stn.51	15.6.1	Heat Recovery Unit - Replace		1	EA	25	16	9	\$13,200	\$4,752
100%	Stn.51	15.6.2	Indirect Makeup AHU - Replace		1	EA	20	11	9	\$9,900	\$4,455
100%	Stn.51	15.6.3	Furnace - Replace		1	EA	20	11	9	\$2,200	\$990
33%	Stn.51	15.6.4	VRF Heat Pump - Contingency		40	EA	6	6	-	\$19,330	\$0
100%	Stn.51	15.6.5	HVAC System - Contingency		1	LS	5	5	-	\$5,000	\$0
100%	Stn.51	15.6.6	Infrared Heaters - Replace		6	EA	20	11	9	\$15,180	\$6,831
33%	Stn.51	15.7.1	Exhaust Fans - Contingency		14	EA	5	5	-	\$7,620	\$0
100%	Stn.51	16.3.1	Electrical System - Contingency		1	LS	10	10	-	\$5,000	\$0
100%	Stn.51	16.5.1	Emergency Generator - Replace		1	EA	30	21	9	\$19,800	\$5,940
100%	Stn.51	16.5.2	Generator Fuel Tank - Replace		1	EA	30	21	9	\$8,800	\$2,640
100%	Stn.51	16.6.1	Exterior Light Fixtures - Replace		1	LS	10	1	9	\$10,000	\$9,000
100%	Stn.51	16.8.1	Fire Control Panel - Replace		1	EA	20	11	9	\$3,740	\$1,683
100%	Stn.51	16.9.1	Audio/Visual Equipment - Upgrades		1	LS	15	6	9	\$77,000	\$46,200
100%	Stn.51	17.1.1	Fireblast 451 - Maintenance		1	EA	10	1	9	\$10,000	\$9,000
100%	Stn.51	18.1.1	Security / Surveillance System - Replace		1	LS	10	1	9	\$16,000	\$14,400
5%	Stn.57	2.6.1	Asphalt Paving - Repair		9180	SF	6	1	5	\$4,040	\$3,367
100%	Stn.57	2.6.2	Asphalt Pavement- Seal Coat & Restripe		9180	SF	6	1	5	\$5,050	\$4,208
100%	Stn.57	2.7.4	Privacy Wood Fence - Replace		120	LF	15	10	5	\$6,070	\$2,023
100%	Stn.57	2.7.5	Chain-link Fence - Repair		205	LF	40	20	20	\$4,280	\$2,140
100%	Stn.57	2.9.2	Landscaping - Maintenance		1	LS	8	8	-	\$5,000	\$0
100%	Stn.57	2.9.3	Wetland - Maintenance		1	LS	15	15	-	\$10,000	\$0
20%	Stn.57	3.3.3	Exterior Concrete Paving - Repair		1730	SF	6	4	2	\$3,200	\$1,067
100%	Stn.57	6.1.2	Garbage Bin Enclosure - Contingency		1	LS	20	20	-	\$1,500	\$0
10%	Stn.57	6.4.5	Brick Siding - Maintenance		4860	SF	20	10	10	\$12,830	\$6,415
100%	Stn.57	7.3.2	Gutters & Downspouts - Replace		511	LF	20	13	7	\$3,160	\$1,106
100%	Stn.57	7.4.7	Metal Roof - Replace		70	SQ	40	13	27	\$60,060	\$40,541
5%	Stn.57	7.4.8	Roof Inspection & Minor Repair		70	SQ	5	2	3	\$3,000	\$1,800
15%	Stn.57	8.2.8	Common Doors & Hardware - Maintenance		31	EA	10	5	5	\$3,320	\$1,660
100%	Stn.57	8.2.6	Overhead Bay Door - Replace		5	EA	20	10	10	\$5,700	\$2,850
100%	Stn.57	8.2.7	Bay Door Operator - Contingency		5	EA	20	20	-	\$55,000	\$0
100%	Stn.57	8.3.3	Storefront System - Maintenance		5	EA	10	10	-	\$19,250	\$0
100%	Stn.57	8.5.2	Aluminum Framed Windows - Replace		1	LS	45	18	27	\$30,000	\$18,000
100%	Stn.57	9.8.5	Front Entry Steel Framed Structure - Paint		128	LF	10	4	6	\$2,250	\$1,350



Fully Funded Balance Calculations

Northshore Fire Department

Continued

Component Description				Quantity	Unit	Maintenance Cycle (Useful Life)	Remaining Useful Life	Effective Age	Current Replacement Cost	Fully Funded Balance
100%	Stn.57	10.4.2	Exterior Signage - Refurbish	1	LS	15	12	3	\$2,500	\$500
50%	Stn.57	11.4.3	Kitchen Equipment - Contingency	5	EA	5	8	-	\$13,750	\$0
100%	Stn.57	11.6.4	Laundry Equipment - Contingency	2	EA	5	5	-	\$3,300	\$0
100%	Stn.57	11.6.5	Station Extractor - Bunker Gear Washer	1	EA	12	7	5	\$8,800	\$3,667
100%	Stn.57	11.8.2	Air Compressor - Replace	3640	SF	12	13	-	\$40,040	\$0
25%	Stn.57	12.3.1	Interior Concrete Floor - Refurbish	5748	SF	25	26	-	\$7,900	\$0
100%	Stn.57	12.3.2	Apparatus Bay - Refurbish	5844	SF	10	5	5	\$13,500	\$6,750
100%	Stn.57	12.3.3	Hallway & Stairwell Walls & Ceiling - Paint	1	LS	25	5	20	\$7,000	\$5,600
100%	Stn.57	12.3.4	Front Reception Desk & Office - Remodel	1	LS	10	3	7	\$25,000	\$17,500
100%	Stn.57	12.3.5	Kitchen - Remodel	1	LS	10	5	5	\$10,000	\$5,000
100%	Stn.57	12.3.6	Day / Dining Room - Remodel	1	LS	15	5	10	\$15,000	\$10,000
100%	Stn.57	12.3.7	Duty Crew Sleep Rooms - Refurbish	1	LS	20	10	10	\$5,000	\$2,500
100%	Stn.57	12.3.8	Exercise Room - Refurbish	1	LS	15	16	-	\$30,000	\$0
100%	Stn.57	12.3.9	Locker & Restroom - Refurbish	1	LS	15	7	8	\$2,000	\$1,067
100%	Stn.57	12.3.10	Laundry & Utility Room - Refurbish	1	LS	10	10	-	\$10,000	\$0
100%	Stn.57	15.2.3	Plumbing System - Contingency	1	LS	10	6	4	\$5,000	\$2,000
100%	Stn.57	15.3.3	Irrigation System - Contingency	1	LS	5	5	-	\$2,500	\$0
100%	Stn.57	15.4.3	Fire Detection System - Maintenance	1	LS	15	7	8	\$5,000	\$2,667
100%	Stn.57	15.4.4	Wet & Dry Fire Sprinkler System - Contingency	1	LS	10	10	-	\$5,500	\$0
100%	Stn.57	15.5.2	Water Heater - Replace	3	EA	15	4	11	\$7,920	\$5,808
100%	Stn.57	15.6.7	HVAC Units - Replace	1	EA	15	8	7	\$11,000	\$5,133
100%	Stn.57	15.6.8	Furnace - Replace	5	EA	10	6	4	\$13,750	\$5,500
100%	Stn.57	15.6.9	Infrared Overhead Heaters - Replace	1	LS	10	10	-	\$5,000	\$0
33%	Stn.57	15.7.2	Exhaust Fans - Contingency	8	EA	5	5	-	\$4,360	\$0
100%	Stn.57	16.3.2	Electrical System - Contingency	1	EA	20	10	10	\$6,600	\$3,300
100%	Stn.57	16.5.3	Emergency Generator - Contingency	1	EA	20	20	-	\$8,800	\$0
100%	Stn.57	16.6.2	Exterior Light Fixtures - Replace	5	EA	15	2	13	\$2,750	\$2,383
100%	Stn.57	16.8.2	Fire Control Panel - Replace	1	EA	20	10	10	\$3,850	\$1,925
100%	Stn.57	18.1.2	Security / Surveillance System - Upgrade	1	LS	10	1	9	\$15,000	\$13,500
FULLY FUNDED BALANCE									Total	\$942,417

CURRENT RESERVE BALANCE = \$170,000

PERCENT FULLY FUNDED = 18%

December 5, 2019

ABBREVIATION KEY

EA each
BLDG building(s)
FIXT fixture(s)

LF linear foot
LS lump sum
SF square feet

SQ roofing square
SY square yard
ZN zone



SUPPLEMENTAL BUDGET INFORMATION (SBI)

RCW 64.90.525 §2 of the WUCIOA requires that the budget disclosure include:

- (d) The current amount of regular assessments budgeted for contribution to the reserve account;
- (e) A statement of whether the association has a reserve study that meets the requirements of RCW 64.90.550 of this act and, if so, the extent to which the budget meets or deviates from the recommendations of that reserve study; and
- (f) The current deficiency or surplus in reserve funding expressed on a per unit basis

Below is a sample of the SBI we will compile when the association is ready to provide a summary of the budget to the unit owners. Please contact RCL one week before the Association plans on sending the budget summary to unit owners and we will issue a completed WUCIOA SBI at no additional charge within one year of issuing the draft of the reserve study report.

Supplemental Budget Information on Reserves for Sample Association

In Compliance with RCW 64.90.525 (Washington Uniform Common Interest Owners Act - WUCIOA) Sections 2(d) through 2(f)
September 18, 2018

Funding Information

✓	Sample Association does have a current reserve study that complies with RCW 64.90.550 (WUCIOA).
✓	Sample Association does have a reserve study that complies with RCW 64.34.382 (Condominium Act).
\$17,800	The current regular reserve assessments budgeted for annual contribution to the reserve account.
\$19,700	The Recommended annual contribution to reserves for the fiscal year ending in 2019.
\$19,500	The Proposed annual contribution to reserves for the fiscal year ending in 2019 per the budget.
✗	The proposed budget does not meet or exceed the reserve study recommendations.
(\$200)	Difference between the Proposed and Recommended annual contribution to reserves.

Current (Deficiency) in Reserve Funds Compared to the Fully Funded Balance on a per Unit Basis

\$102,000	The projected fiscal year end 2018 reserve balance per the budget.
\$117,106	The projected fiscal year end 2018 Fully Funded Balance per the reserve study.
(\$15,106)	The total (deficiency) in reserves, compared to the Fully Funded Balance.

Unit Number	Allocated Interest	(Deficiency) per Unit	Unit Number	Allocated Interest	(Deficiency) per Unit	Unit Number	Allocated Interest	(Deficiency) per Unit
101	6.00%	(\$906.35)	201	6.00%	(\$906.35)	301	6.00%	(\$906.35)
102	7.00%	(\$1,057.40)	202	7.00%	(\$1,057.40)	302	7.00%	(\$1,057.40)
103	9.00%	(\$1,359.52)	203	9.00%	(\$1,359.52)	303	9.00%	(\$1,359.52)
104	11.30%	(\$1,706.95)	204	11.30%	(\$1,706.95)	304	11.40%	(\$1,722.06)
Column Total	33.30%	(\$5,030.22)	Column Total	33.30%	(\$5,030.22)	Column Total	33.40%	(\$5,045.33)



DISCLOSURES

1. Reserve Consultants LLC also provides construction inspection services for condominiums and does design and construction oversight for major repair projects, including roofing, decks and building envelope replacement.
2. No shareholder or employee of Reserve Consultants LLC has any interest in, or obligation to, any construction company, management company, or development entity that creates condominiums; nor is there any involvement with Northshore Fire Department which could result in a conflict of interest.
3. Reserve Consultants LLC has been a member of the Community Associations Institute since about 1993, and has worked with a variety of management companies, associations and other types of clients in Washington State.
4. This report and analysis is based upon observations of the visible and apparent condition of the building and its major components on the date of the inspection. Although care has been taken in the performance of this inspection, Reserve Consultants LLC (and/or its representatives) make no representations regarding latent or concealed defects which may exist and no warranty or guarantee is expressed or implied. This report is made only in the best exercise of our ability and judgment. Conclusions in this report are based on estimates of the age and normal working life of various items of equipment and appliances. Predictions of life expectancy and the balance of useful life are necessarily based on industry and/or statistical comparisons. It is essential to understand that actual conditions can alter the useful life of any item. The previous use or misuse, irregularity of servicing, faulty manufacture, unfavorable conditions, acts of god, and unforeseen circumstances make it impossible to state precisely when each item would require replacement. The client herein should be aware that certain components within the above referenced property may function consistent with their purpose at the time of inspection, but due to their nature, are subject to deterioration without notice.
5. Unless otherwise noted, all reserve components are assumed to meet the building code requirements in force at the time of construction. Any on-site inspection should not be considered a project audit or quality inspection.
6. Conclusions reached in this report assume responsible ownership and competent management of the property. Information provided by others is believed to be reliable. Information provided by others was not audited; we assume no responsibility for accuracy thereof. Any on-site inspection should not be considered a project audit or quality inspection.
7. The reserve study is a reflection of information provided to the consultant and assembled for the organization's use, not for the purpose of performing an audit, quality/forensic analyses or background checks of historical record.



APPENDIX - GLOSSARY OF TERMS

Allocated Interests - the following interests allocated to each unit: (a) In a condominium, the undivided interest in the common elements, the common expense liability, and votes in the association; (b) In a cooperative, the common expense liability, the ownership interest, and votes in the association; and (c) In a plat community and miscellaneous community, the common expense liability and the votes in the association, and also the undivided interest in the common elements if owned in common by the unit owners rather than an association. RCW 64.90.010 §2.

Assessment - all sums chargeable by the association against a unit, including any assessments levied pursuant to RCW 64.90.480, fines or fees levied or imposed by the association pursuant to this chapter or the governing documents, interest and late charges on any delinquent account, and all costs of collection incurred by the association in connection with the collection of a delinquent owner's account, including reasonable attorneys' fees. RCW 64.90.010 §3.

Association or Unit Owners Association - the unit owners association organized under RCW 64.90.400 of WUCIOA and, to the extent necessary to construe sections of this chapter made applicable to common interest communities pursuant to RCW 64.90.085, 64.90.095, or 64.90.100 of WUCIOA, the association organized or created to administer such common interest communities. RCW §64.90.010 §4)

Baseline Funding Plan - A reserve contribution rate that is constant, increasing with inflation, to provide funds for all anticipated reserve expenses so that no special assessments are required for 30 years, but with no excess funds some years.

Board - the body, regardless of name, designated in the declaration, map, or organizational documents, with primary authority to manage the affairs of the association. RCW §64.90.010 §6.

Building Codes - Nationally recognized standards used to gauge the acceptability of a particular material or building procedure. Typically, if something is built to "code," it is acceptable to all concerned. Some often used codes are International Building Code (IBC) (applicable to most multifamily housing), International Residential Code (IRC) (applicable to one and two family structures),

Washington Energy Code, National Electric Code (NEC), Uniform Plumbing Code (UPC), and the National Fire Protection Association Standards (NFPA). These are usually amended slightly by each city or county.

Building Component - see "Reserve Component".

Component Number - A number assigned to each building component that allows grouping of like components. The numbers are based roughly on the Construction Specification Institute system.

Common Elements - (a) In a condominium or cooperative, all portions of the common interest community other than the units; (b) In a plat community or miscellaneous community, any real estate other than a unit within a plat community or miscellaneous community that is owned or leased either by the association or in common by the unit owners rather than an association; and (c) In all common interest communities, any other interests in real estate for the benefit of any unit owners that are subject to the declaration. RCW §64.90.010 §7.

Common Expense - any expense of the association, including allocations to reserves, allocated to all of the unit owners in accordance with common expense liability. RCW §64.90.010 §8.

Common Expense Liability - the liability for common expenses allocated to each unit pursuant to RCW 64.90.040 of RCW. RCW §64.90.010 §9.

Common Interest Community - real estate described in a declaration with respect to which a person, by virtue of the person's ownership of a unit, is obligated to pay for a share of real estate taxes, insurance premiums, maintenance, or improvement of, or services or other expenses related to, common elements, other units, or other real estate described in the declaration. "Common interest community" does not include an arrangement described in RCW 64.90.110 or RCW 64.90.115. A common interest community may be a part of another common interest community. RCW §64.90.010 §10.

Contribution Rate - in a Reserve Study as described in RCW 64.34, the amount contributed to the reserve account so that the association will have cash reserves to pay major maintenance, repair, or replacement



costs without the need of a special assessment. RCW 64.34.020 (10)

Constant Dollars - costs and contributions are provided in today's dollars, no matter how far in the future they occur. Inflation and interest are not factored in.

Effective Age - the difference between the useful life and the remaining useful life. RCW 64.34.020 §19 & RCW §64.90.010 §21.

Full Funding Plan - a reserve funding goal of achieving one hundred percent fully funded reserves by the end of the thirty-year study period described under RCW 64.90.550 of WUCIOA, in which the reserve account balance equals the sum of the estimated costs required to maintain, repair, or replace the deteriorated portions of all reserve components. RCW §64.90.010 §25.

Fully Funded Balance - the current value of the deteriorated portion, not the total replacement value, of all the reserve components. The fully funded balance for each reserve component is calculated by multiplying the current replacement cost of that reserve component by its effective age, then dividing the result by that reserve component's useful life. The sum total of all reserve components' fully funded balances is the association's fully funded balance. RCW 64.34.020 §22 & RCW §64.90.010 §26.

Inflated Dollars - as opposed to constant dollars, inflated dollars recognize that costs in the future will probably be higher than today because each dollar will buy fewer goods and services. A rate of inflation must be assumed and applied to all future costs. Also referred to as future cost.

Inflation Multiplier - 100% plus the assumed rate of inflation. Thus, for an assumed yearly inflation rate of 5%, the "multiplier" would be 105% or 1.05 if expressed as a decimal number rather than as a percentage. Each successive year the previous year's "multiplier" is multiplied by this number to arrive at the next year's "multiplier."

Interest Rate Multiplier - The assumed rate of interest earned on the average annual reserve bank account balance. Thus, 4% interest would be 0.04 expressed as a decimal number. A rate of interest earned must be assumed for all future years. Typically this is lower than the rate of inflation.

Limited Common Element - a portion of the common elements allocated by the declaration or by operation of RCW 64.90.210 §1(b) or §2

for the exclusive use of one or more, but fewer than all, of the unit owners. RCW §64.90.010 §30.

Unit owners may be responsible for the cost to repair and maintain limited common elements, so those costs may not appear in a Reserve Study.

Maintenance Cycle - the frequency of maintenance on a component to reach or extend its Useful Life. Often shorter than the full "Useful Life" for repairs that occur in lieu of complete replacement.

Next Repair - the next time the "Repair Cycle" starts with work on a component.

Nominal Reserve Costs - the current estimated total replacement costs of the reserve components are less than fifty percent of the annual budgeted expense of the association, excluding contributions to the reserve funds, for a condominium or cooperative containing horizontal unit boundaries and less than seventy five percent of the annual budgeted expenses of the association, excluding contributions to the reserve fund for all other common interest communities. RCW §64.90.010 §34.

Percent Fully Funded - The percentage of the "Fully Funded Balance" which the current condominium Reserve Account actually has in it.

RCW - the Revised Code of Washington. RCW 64.34 is the **Washington Condominium Act**, the statute that governs 'New Act' condominiums formed between July 1, 1990 and June 30, 2018.

RCW 64.90 is the Uniform Common Interest Ownership Act (**WUCIOA**) and governs common interest properties formed after July 1, 2018 and requires all common interest properties in Washington State to comply with RCW 64.90.525.

Remaining useful life - the estimated time, in years, that a reserve component can be expected to continue to serve its intended function. RCW 64.34.020 §31.

Or the estimated time before a reserve component will require major maintenance, repair or replacement to perform its intended function. RCW §64.90.010 §44.

Replacement Cost - the current cost of replacing, repairing, or restoring a reserve component to its original functional condition. RCW 64.34.020 §32.



Or the estimated total cost to maintain, repair, or replace a reserve component to its original functional condition. RCW §64.90.010 §45.

Reserve Account - Money set aside for future repair and replacement projects. For condominiums, the RCW requires a separate Reserve Account be maintained to hold reserves to fund repair or replacement of Reserve Components.

Reserve Component - common elements whose cost of maintenance, repair, or replacement is infrequent, significant, and impractical to include in an annual budget. RCW 64.34.020 §34.

Or a physical component of the common interest community which the association is obligated to maintain, repair, or replace, which has an estimated useful life of less than thirty years, and for which the cost of such maintenance, repair or replacement is infrequent, significant, and impractical to include in an annual budget. RCW §64.90.010 §46.

Reserve Contribution Rate - The amount of money saved to fund replacement costs for maintenance and repairs of common elements. See "Contribution Rate". Current contributions and Recommended contributions may be different.

Reserve Specialist - A designation for those professionals who have met the standards established by Community Associations Institute (www.caionline.org) for Reserve Study providers.

Reserve Study - A physical assessment of a building and a subsequent report which estimates the anticipated major maintenance, repair, and replacement costs, whose infrequent and significant nature make them impractical to be included in an annual budget, which will need to be repaired or replaced over the next 30 years. It provides estimates of these replacement costs and details expected annual expenditures. It is used to calculate the Reserve Contribution Rate required to maintain a facility in good condition both functionally and cosmetically. The Washington Condominium Act sets out requirements for annual reserve studies.

Reserve Study Professional means an independent person suitably qualified by knowledge, skill, experience, training, or education to prepare a reserve study in accordance with RCW 64.34, RCW 64.34.020 §35, RCW 64.90.545 and RCW 64.90.550. For

the purposes of WUCIOA, "independent" means a person who is not an employee, officer, or director, and has no pecuniary interest in the declarant, association, or any other party for whom the reserve study is prepared. RCW §64.90.010 §47.

Special Assessment - A levy against all unit owners that is necessary when a needed repair/replacement/upgrade has not been planned for, and for which insufficient money has been saved.

Threshold Funding (contribution rate) - A Reserve Contribution Rate that is constant, increasing with inflation, to provide funds for all anticipated Reserve Expenses for the life of the study, but leaving a minimum level of Reserves (the "threshold") at all times. Our default minimum threshold is one year's contribution.

Typ. - Abbreviation for 'typical'; used on photographs and in text to refer to a problem that is shown or described once, but applies to many locations.

Typical Life - An average expected life for an average building component. As in any statistical average, there is a range of years over which each individual item might fall. This is the same as "Useful life".

Useful life means the estimated time, in years, that a reserve component can be expected to serve its intended function. RCW 64.34.020 §40 or the estimated time during which a reserve component is expected to perform its intended function without major maintenance, repair or replacement. RCW §64.90.010 §59.

Year End Reserve Balance or Reserve Fund Balance - What is projected to be left in the reserve account after the expected yearly expenses and contributions are added to the prior year's carryover balance. Assumes that the reserve contributions and expenses occur as predicted.

Yearly Expenses - The total labor and material costs associated with all of the repairs/maintenance that are scheduled in that particular year.

30 Year Spreadsheet - A summary listing each building component and its yearly cost to maintain/repair over the next 30 years. It also lists the annual reserve fund balance, reserve contributions, reserve expenses and bank interest earned on any reserve fund balance.



APPENDIX - EVALUATORS' CREDENTIALS

Denise Dana

Principal

Reserve Consultants LLC

B.S. Education,
M. Architecture

Washington Registered
Architect, #8702

LEED Accredited Professional

Reserve Specialist, #291

Denise Dana first obtained licensure as an Architect and became a LEED accredited professional in 2003. She is currently a licensed Architect in the State of Washington and is certified by the National Council of Architectural Registration Boards. With over fifteen years of experience in architecture, her resume includes a variety of project types ranging from residential to corporate. She has worked through all phases of construction including design development, construction documentation and construction administration with project budgets varying from a few thousand dollars to over sixty million dollars. Denise has been conducting reserve studies since joining Reserve Consultants in 2008; in 2011 she was recognized as a "Reserve Specialist" by the Community Associations Institute.

Mahria Sooter

Principal

Reserve Consultants LLC

B.A. Springfield College, MA

Reserve Specialist, #380

Mahria joined Reserve Consultants in 2016. Mahria holds a Bachelor of Science degree from Springfield College, MA. In 2019, the Condominium Associations Institute recognized Mahria as a "Reserve Specialist." She has over 20 years of experience with marketing and various aspects of integrated communication in the construction industry. In 2018, Mahria received a certificate of completion from the King County Dispute Resolution Center for Basic Mediation Training providing her with skills to assist Associations with identifying and effectively communicating interests and goals. Mahria's attention to detail lends well to providing clear and concise recommendations that clients can utilize to make informed decisions.



EXECUTIVE SUMMARY

Description

Northshore Fire Department has one station serving Lake Forest Park and Kenmore and one serving Lake Forest Park, Washington. This Reserve Study meets the requirements of the Washington Unified Common Interest Owner Act for a Level 1 Reserve Study with a site visit, and was prepared by an independent Reserve Study Professional.

Background

The Northshore Fire Department consists of Station 51 and Station 57. The headquarters are housed at Station 51, along with a training facility. Construction Station 51 was completed in 2011; construction of Station 57 was completed in 1995.

The recommended annual contribution to reserves for 2020 is \$162,300.

The prefix before the component number helps to distinguish which fire station a component references. "Stn.51" is abbreviated for Station 51 and "Stn.57" is abbreviated for Station 57.

Financial Information for the Current 2019 Fiscal Year

Reserve Account Balance on January 1, 2019	\$170,000
Annual Operating Budget	\$9,948,992
Component Inclusion Threshold (1% of the Operating Budget)	\$99,490
Annual Budgeted Contribution to Reserves (2019)	\$30,000
Remaining Contributions to Reserves for the Year	\$30,000
Planned or Implemented Special Assessment	None
Fully Funded Balance	\$942,417
Percent Funded at Time of Study	18%
Funding Status at Time of Study	High Risk for a Special Assessment

Recommended Contribution to Reserves Starting in 2020

2020 Recommended Annual Contribution Rate	\$162,300
Breakdown of the Recommended Contribution :	
2020 Recommended Contribution per Month	\$13,525
2020 Baseline Funding Plan Contribution Rate	\$153,900
2020 Full Funding Plan Contribution Rate	\$185,300

The recommended reserve contribution represents a Threshold Funding Plan to prevent special assessments over the course of the 30-year study **while maintaining a minimum reserve account balance of one year's contribution to reserves.** The fiscal year for the Reserve Study is a calendar year. Cost projection accuracy decreases into the distant future. Assumptions should be reconsidered and updated with each revision of the study.

While Northshore Fire Department is not required to comply with the Washington Unified Common Interest Owner Act, this report does comply with the requirements of RCW 64.90. Legal references to "associations" remain in the document. Northshore Fire Department is under no legal requirement to fund reserves.



KING COUNTY FIRE PROTECTION DISTRICT NO.16

7220 NE 181st Street
KENMORE, WA 98028

BUSINESS: 425-354-1780 FAX: 425-354-1781

RESOLUTION NO. 17-02

RESOLUTION DEFINING FUND POLICIES

WHEREAS, the financial affairs of the District are managed by the Board of Commissioners; and

WHEREAS, pursuant to RCW 52.14.100 the Board of Commissioners has the power to adopt reasonable rules to govern the District and to generally perform all such acts as may be necessary to carry out the objects of the creation of the District; and

WHEREAS, an integral part of financial planning is establishing General Expense and Reserve Funds to cover the costs of general operating expenses, facility maintenance and improvements, equipment financing, employee benefits, and insurance obligations; and

NOW THEREFORE BE IT RESOLVED that King County Fire Protection District No. 16 hereby establishes a General Expense and Reserve Fund Plan as follows:

I. GENERAL EXPENSE FUND

A minimum balance of twenty percent (20%) of the annual expense budget shall be maintained in the General Expense Fund at all times. This fund balance would be measured on March 31st and September 30th of each year when balances would be at their lowest point.

II. RESERVE FUND

A. Reserve Fund Categories, Purpose and Funding Levels

The Reserve Fund shall be organized into six (6) main sub-categories to facilitate clear intent and accurate accounting. The level of funding of each category shall be no less than a minimum of the values stated below. Utilization of reserve funding shall be consistent with the associated general purpose statements provided for each category.

1. Natural Disaster

Purpose: To provide funding for overtime costs; casual labor; temporary facilities; food and equipment for extended

emergency operations lasting a minimum of fourteen days.

Fund Level: \$250,000

2. Insurance Contingency

Purpose: To provide funding for losses normally covered by insurance but exceeding coverage, such as: deductibles, non-insured loss, loss greater than insurance coverage, fines or uninsured litigation costs, labor relations litigation costs, unplanned attorney or consultant fees, court costs, penalties and judgments and unemployment claims.

Fund Level: \$200,000

3. Loss of Revenue

Purpose: To provide funding to allow for the continuation of services in the event of an unanticipated and immediate loss of revenue.

Fund Level: 25% of the annual operating budget

4. Employee Benefit

Purpose:

- A. To provide funding for LEOFF 1 medical insurance premiums, long term healthcare premiums and other approved medical expenses would be expensed from this fund.
- B. To fund post-employment benefits such as sick-leave and vacation buyback, etc. Payments made upon retirement shall be made from this fund. Replenishment of this fund could be spread out over several years, or prefunded if a large number of retirements were known in advance.

Fund Level:

- A. 100% of the GASB recommendation for LEOFF 1 retirees, and;
- B. 50% of the maximum potential employee buyback of optional time-off and sick leave hours, and;

5. Apparatus and Equipment Replacement

Purpose: To provide funding for the replacement of apparatus, vehicles and equipment that are designated for replacement at specific intervals and have a calculated

replacement cost that would be difficult to fund through the annual budgeting process.

Fund Level: 100% of the Capital Asset Replacement Plan for apparatus, vehicles and equipment

6. Facilities Improvement

Purpose: To provide funding for the maintenance and improvements of District facilities. This fund would be solely for larger ticket items such as roof repairs, HVAC systems, etc., and not a substitution for annual budgeting for normal facility maintenance.

Fund Level: Minimum of \$200,000

- B. Transactions expensed from the General Expense and Reserve Funds shall comply with the accounting principles established by King County Finance and Business Operations, the Washington State Auditor and RCW.
- C. The Fire Chief shall provide quarterly reports reflecting Reserve Fund activity in the BARS format as required by the Washington State Auditor and RCW.
- D. The Fire Chief shall submit Reserve Fund allocation recommendations to the Board of Commissioners each year as required to maintain funding levels as established by this resolution.

BE IT FURTHER RESOLVED, that Resolution 14-13 is hereby repealed.

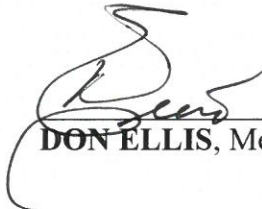
DATED this 6th day of June, 2017.

BOARD OF COMMISSIONERS


ERIC ADMAN, Chair



KAE PETERSON, Member


CAROLYN ARMANINI, Member


DON ELLIS, Member


DAVE MAEHREN, Member

ADOPTED at a regular meeting of the
Board of Commissioners of King County
Fire Protection District No. 16, held on June 6th, 2017


KATE HANSEN, Secretary
Board of Commissioners

**AGREEMENT BETWEEN THE NORTSHORE FIRE DEPARTMENT
AND INTERFACE SYSTEMS, LLC RELATING TO THE
COMPUTATION OF BENEFIT CHARGE AMOUNTS, PREPARATION
OF NOTICES AND RELATED TASKS AS DESCRIBED HEREIN.**

THIS AGREEMENT ("Agreement") is made and entered into by and between King County Fire District No. 16, a Washington municipal corporation hereinafter referred to as the "District", and Interface Systems, LLC, a limited liability company with a principle place of business in Washington State, hereinafter referred to as the "Contractor". The District and the Contractor are at time collectively referred to hereinafter as the "Parties".

1. CONTRACTOR: Interface Systems, LLC
ADDRESS: 12607 129th Street East, Puyallup, WA 98374

Washington State UBI Number: 604-463-789
Federal Employer ID Number: 84-2210805
2. The Contractor will provide the services and personnel as set forth in the Contractor's attached Benefits Charge Work Plan which is incorporated by reference as part of the Agreement and specifies the duties and responsibilities of the Contractor
3. The Contractor's authorized contact for the Agreement is Mr. Neil Blindheim.
The District's authorized contact for the Agreement is the Fire Chief.
4. The period of performance under this Agreement will be from September 1, 2020 through August 31, 2021, unless sooner terminated as provided in Section 5 below.
5. The District may terminate this Agreement for with or without cause upon thirty (30) days' written notice to the Contractor and shall pay the Contractor only for the services then completed and accepted by the District. The Contractor may not terminate this Agreement except upon breach by the District and following not less than thirty (30) days written notice thereof to the District.
6. The Contractor's compensation for services rendered shall be \$8,000.00 including all expenses and all work specified in the Contractor's proposal. Any additional services provided by the Contractor shall have prior written approval of the District.
7. The District shall bear the cost of county data processing and administrative charges related to their fire service charge, a portion of professional liability E&O

insurance, FTP site, and costs related to public notices, mailed information, and applicable postage charges.

8. The Contractor shall submit two invoices, together with a progress report explaining the status of each project. Each billing will clearly indicate that it is for services rendered in performance under this Agreement. All billings must be submitted for payment to:

Northshore Fire Department
7220 NE 181st St
Kenmore, WA 98028


Payment shall be considered timely if made by the District within forty-five (45) days.

9. If any provision of this Agreement shall be deemed in conflict or invalid with any statute or rule of law, such provision shall be deemed modified to be in conformance with said statute or rule of law and such conflict or invalidity shall not affect the validity of any other section of this Agreement unless such conflict or invalidity materially alters the rights, privileges, duties, or obligations hereunder.
10. This Agreement, including the Benefits Charge Work Plan, contains all the terms and conditions agreed upon by the Parties. No other understanding, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the Parties hereto. Any amendments or changes to this agreement must be mutually agreed to in writing by both Parties.

IN WITNESS WHEREOF:

Northshore Fire Department and the Contractor have signed this Agreement.

CONTRACTOR



Neil A. Blindheim, Manager
8/3/2020

Date

STATE OF WASHINGTON
Northshore Fire Department
Authorized Signature(s)/ Date

Greg Ahearn, Interim Fire Chief

Attorney
Approved as to form.

**Interface Systems, LLC
Benefit Charge Work Plan**

Interface Systems, LLC will perform the following items of work for Northshore Fire Department to maintain the Benefit Charge method of funding of the District.

- 1. Obtaining New Download of Data Processing Information:**
Interface Systems, LLC will work with the King County Assessor's Office to obtain District's property information from the County.
- 2. Update Northshore Fire Department Database:**
Interface Systems, LLC will update the Northshore Fire Department Benefit Charge database with current property information. Interface will also integrate Northshore Fire Department's sprinkler information into the FBC database.
- 3. Compute Benefit Charge Amount:**
Interface Systems, LLC will compute the Benefit Charge for each property in Northshore Fire Department District based upon the approved District formula and the aggregate amount of funds to be collected under the Benefit Charge by the District. These charges will be uploaded to King County for inclusion into each property owner's tax statement.
- 4. Prepare and Mail Taxpayer Notices:**
Interface Systems, LLC will prepare taxpayer notices reflecting the Benefit Charge to be collected against each property in the District for the year 2021 and provide for the mailing of these Taxpayer Notices to property owners.
- 5. Assist with Taxpayer Appeals:**
Interface Systems, LLC will assist the District with Taxpayer Appeals. Interface guarantees all general information and appeal information will be provided in time for the County to process changes for the first and second half assessments.
- 6. Maintain District Database:**
Interface Systems, LLC will maintain the District's Benefit Charge Database, throughout the year, for such changes in property classifications or charge changes as may be authorized by the District.
- 7. Technical Assistance:**
Interface Systems, LLC will provide technical assistance to the District on Benefit Charge questions which arise from property owners.



KING COUNTY FIRE PROTECTION DISTRICT NO. 16

7220 NE 181st Street
KENMORE, WA 98028

BUSINESS: (425) 354-1780 FAX: (425) 354-1781

FIRE BENEFIT CHARGE NOTIFICATION

This is an informational letter about your Fire Benefit Charge for fire & emergency medical services which the Northshore Fire Department (King County Fire Protection District No. 16) provides to you and your family.

In 1989, voters residing within the service area of the Northshore Fire Department originally approved the Fire Benefit Charge (FBC) as an alternative revenue source to assist in the funding of Fire Department operations. The Northshore Fire Department receives revenue from both a reduced property tax levy and the FBC. By utilizing the FBC along with the reduced tax levy dollars, the District is able to operate in a financially efficient manner.

If your home or business has a functioning fire sprinkler system covering the entire structure, you will qualify for a 50% reduction on your FBC. If you are a low-income senior citizen or disabled person, you may qualify for additional reductions on your FBC and property taxes. For more information on low-income senior citizen or disabled person discounts contact King County Department of Assessments Exemptions Unit at 206-296-3920.

If you feel the FBC for this parcel is inaccurate, you may file an appeal. Appeal forms are available on our website: www.northshorefire.com or at the Fire District Headquarters located at 7220 NE 181st Street Kenmore. Corrections from successful appeals received by Wednesday March 4, 2020, will be reflected on your initial property tax statement.

If you have any questions about the FBC as applied to your property, please visit the District's website, and click on the "Fire Benefit Charge" in the "Information" tab. If you do not have access to the internet, or are unable to find the answer to your question on our website, please contact the District administration at 425-354-1780.

The Northshore Fire Department provides emergency response for fire, emergency medical and other life safety needs of the community. If you have any questions or comments about your fire and emergency medical services, call or e-mail the District at admin@northshorefire.com. The Commissioners are proud to be part of your community and thank you for your continued support of quality service.

Sincerely,


Rick Verlinda


David Maehren


Don Ellis


Rick Webster


Josh Pratt

Northshore Fire Department Board of Fire Commissioners

- INFORMATION ONLY - The Fire Benefit Charge is included in your property taxes

Appeal forms are available on our website or at the District Headquarters. To check your parcel information, go to:
<http://gismaps.kingcounty.gov/parcelviewer2>

Appeals must be received by Wednesday March 4, 2020

Parcel Number:	2020 FBC Charge:
Square Footage:	Property Type:
Fire Sprinkler System Discount Applied:	Low Income Senior Citizen Discount Applied:

THIS IS NOT A BILL - INFORMATION ONLY

King County Fire Protection District No. 16
7220 NE 181st Street
Kenmore, WA 98028

PRESORT STD.
US POSTAGE
PAID
OLYMPIA, WA
PERMIT NO. 583

Fire Benefit Charge Explanation

Unlike taxes, the Fire Benefit Charge (FBC) is not based on the assessed value of your property. The FBC calculation is based on the total square footage of buildings (including garages) located on the property and the property type (residential, multi-family, commercial) as recorded by the King County Assessor's Office.

For a step-by-step guide on how your square footage was calculated for the FBC, please visit:
<https://www.northshorefire.com/information/fire-benefit-charge/>

– INFORMATION ONLY– The Fire Benefit Charge is included in your property taxes

WARRANT/CHECK REGISTER

Northshore Fire Department

Time: 17:35:25 Date: 09/11/2020

MCAG #: 2512

09/23/2020 To: 09/23/2020

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Trans	Date	Type	Acct #	War #	Claimant	Amount	Memo
1728	09/23/2020	Claims	1	0	ARAMARK UNIFORM SERVICES	22.00	Lobby Mats
1729	09/23/2020	Claims	1	0	ARAMARK UNIFORM SERVICES	22.00	Lobby Mats
1730	09/23/2020	Claims	1	0	BOTHELL FIRE & EMS	8,912.13	Deputy Chief Services - August
1731	09/23/2020	Claims	1	0	BOTHELL FIRE & EMS	6,817.23	Fire Marshal Services - August
1732	09/23/2020	Claims	1	0	CENTURY LINK	60.00	Phone Lines - St 57
1733	09/23/2020	Claims	1	0	CFO SELECTIONS LLC	907.50	Tom B - Update Shoreline Model / Quarterly Reconciliation
1734	09/23/2020	Claims	1	0	DELL COMPUTER	1,196.54	New Monitors - Admin
1735	09/23/2020	Claims	1	0	EASTSIDE PUBLIC SAFETY COMM. AGENCY	937.80	September 2020 - Radio Access Fees
1736	09/23/2020	Claims	1	0	ECMS ENSEMBLE CARE MAINTENANCE SERVICE	739.66	Alterations for Taiwo
1737	09/23/2020	Claims	1	0	GALLS, LLC - DBA BLUMENTHAL UNIFORM	133.66	BC Polos
1738	09/23/2020	Claims	1	0	GALLS, LLC - DBA BLUMENTHAL UNIFORM	66.83	BC Polo / Embroidery
1739	09/23/2020	Claims	1	0	GALLS, LLC - DBA BLUMENTHAL UNIFORM	394.90	Structural Boots - Pritchett
1740	09/23/2020	Claims	1	0	GALLS, LLC - DBA BLUMENTHAL UNIFORM	469.69	Day Boots - Pritchett
1741	09/23/2020	Claims	1	0	GUARDIAN SECURITY SYSTEMS, INC.	214.51	Monitoring - St 57
1742	09/23/2020	Claims	1	0	GUARDIAN SECURITY SYSTEMS, INC.	2,216.51	End of Monitoring Contract Cancellation Fee
1743	09/23/2020	Claims	1	0	KING COUNTY FINANCE DIVISION	1,867.00	August 2020 I-Net
1744	09/23/2020	Claims	1	0	L. N. CURTIS & SONS	70.67	Shield for Booth
1745	09/23/2020	Claims	1	0	L. N. CURTIS & SONS	277.86	Pants - Pritchett
1746	09/23/2020	Claims	1	0	L. N. CURTIS & SONS	178.19	Boots - Creger-Zier
1747	09/23/2020	Claims	1	0	L. N. CURTIS & SONS	463.10	PPE Boots - Creger-Zier
1748	09/23/2020	Claims	1	0	LIFE ASSIST	268.18	EMS Supplies
1749	09/23/2020	Claims	1	0	LIFE ASSIST	454.78	EMS Supplies
1750	09/23/2020	Claims	1	0	NATURAL CONCEPT LANDSCAPE	132.00	Landscape Repairs - St 51
1751	09/23/2020	Claims	1	0	NATURAL CONCEPT LANDSCAPE	529.25	Landscaping - St 51
1752	09/23/2020	Claims	1	0	NEIL BLINDHEIM	7,472.00	Fire Benefit Charge
1753	09/23/2020	Claims	1	0	NORTHSHORE UTILITY DISTRICT (NUD)	4,117.31	August - Fuel & Maintenance
1754	09/23/2020	Claims	1	0	PRAXAIR DISTRIBUTION	21.84	Oxygen - St 51
1755	09/23/2020	Claims	1	0	PSR MECHANICAL	492.25	HVAC Repair - St 51 work order 2008-0453
1756	09/23/2020	Claims	1	0	REPUBLIC SERVICES #172	348.52	Garbage / Recycle - St 51
1757	09/23/2020	Claims	1	0	REPUBLIC SERVICES #172	151.25	Garbage - St 57
1758	09/23/2020	Claims	1	0	STERICYCLE	87.34	Bio Hazard Disposal
1759	09/23/2020	Claims	1	0	UNITED PARCEL SERVICE	32.88	Shipping
1760	09/23/2020	Claims	1	0	US BANK	4,759.17	Charges for Card Ending 4689
1761	09/23/2020	Claims	1	0	US BANK	2,912.36	Charges for Card Ending 5507
1762	09/23/2020	Claims	1	0	VERIZON BUSINESS	748.59	VOIP - St 51
1763	09/23/2020	Claims	1	0	WOODINVILLE FIRE & RESCUE	10,200.00	Fire Chief Services

001 General Fund 10-016-0010

58,695.50

Claims: 58,695.50
58,695.50

WARRANT/CHECK REGISTER

Northshore Fire Department

Time: 17:35:44 Date: 09/11/2020

MCAG #: 2512

09/23/2020 To: 09/23/2020

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Trans	Date	Type	Acct #	War #	Claimant	Amount	Memo
1725	09/23/2020	Claims	4	0	ALFRED J BAKER	1,192.55	LEOFF I
1726	09/23/2020	Claims	4	0	OPENSQUARE	4,513.50	Chairs for Station 57
1727	09/23/2020	Claims	4	0	US BANK	1,688.14	Charges for Card Ending 4689
004 Reserve Fund 10-016-6010						7,394.19	
						<u>7,394.19</u>	Claims:
						7,394.19	7,394.19

Fire Chief's Report

Submitted by Chief Ahearn

September 15, 2020

Administration/Financial:

- Work on the 2021 Budget is ongoing
- Finance Specialist Killion will be attending the upcoming WFOA virtual conference on September 23 and 24.

Human Resources:

- Work continues with Consultant Ron Hiraki to develop the District's upcoming Lieutenant promotional exam this fall. HRM Moore and Mr. Hiraki completed initial orientation for interested candidates.
- HRM Moore and FS Killion conducted HR and Payroll new hire orientation with recruits
- New hires began Fire Academy. One recruit incurred an on-duty injury prior to the Academy start date and has not been able to join the class yet.
- AS Walsh will begin WAPRO training in public records in order to provide the District's Records Officer (FS Killion) some additional support, if needed.
- Unfortunately, the District had one Probationary Firefighter recently not pass probation. HRM Moore assisted DC McDonald to support the individual's separation from employment.
- HRM Moore initiated flu shot coordination for District employees through AMR. BC Knight will be coordinating details this year for the department.
- HRM Moore has begun preparing for Open Enrollment for 2021 benefit enrollment in the fall. The District is still awaiting 2021 rate information for next year but anticipates a single-digit increase.
- HRM Moore made some minor updates to the District website to reflect staffing changes and Board Meeting date move from Wednesdays to Tuesdays.

Training:

- Captain Burrow created an end of probation practical evaluation for Probationary Firefighter Gillis. It has been scheduled for the end of this month.
- Captain Burrow submitted a 2021 training budget to Chief Ahearn.
- Captain Burrow is meeting regularly with Ron Hiraki, HRM Moore, BC Morris, BC Sauer, and Lt. Jamerson for the upcoming lieutenants test. The assessment orientation was September 9.

North King County Training Consortium (NKCTC) Activities:

- The Training Officers are currently collaborating to create standardized manuals for the participating agencies to include a basic fundamentals manual, Probationary Firefighters taskbook, hose manual, ladder manual, and skill sheets to support each document. The Training Officers are meeting with Subject Matter Experts from each agency to maximize collaboration.
- The Training Officers completed Tactical Training for the Battalion Chiefs. Topics included receiving the transfer of command from the initial Incident Commander,

making assignments for the first and second alarm units, and using the latest edition of the Tactical Worksheet.

- Captain Burrow has been collaborating with the NKCTC Training Officers to develop a common Probationary Firefighters Taskbook. Each section contains policy review, manipulative skills, and EMS skills and assessments.
- The NKCTC Training Officers received the entry level firefighters from both Northshore Fire Department and Woodinville Fire & Rescue on Monday, August 24. The focus was to ensure all issued Personal Protective Equipment fit properly, and ensure the group has a basic understanding of industry standards of hose, ladders, hand tools, power tools, ropes, and knots.
- Third quarter Multi Company Operations began September 4. The scenario provides complex troubleshooting for the Company Officers and the Battalion Chiefs.

Operations:

- Reaction time (average)
 - Total EMS incidents – 84 1:28 August 28-September 9
 - Total Fire incidents – 39 2:01 August 28-September 9
- Response time from call received to on scene (average)
 - Total Unit Responses – 92 4:50 August 28-September 9
- Continue to conduct semi-annual PPE cleaning. We are seeing a significant increase in bunker gear coming back having been red tagged “out of service unable to repair”. We will need to discuss moving forward.
- Northshore Fire is sending up to 8 members through the Fire Department Incident Safety Officer program in conjunction with the NKCTC. This is a certified class and will allow our members to officially serve as a safety officer on fire scenes, MVC, and tech rescue calls. This is very exciting and a big step in firefighter safety and health.
- Our new recruits began on Tuesday, September 1. Chief Ahearn and DC McDonald will begin comprehensive evals with them beginning September 16.
- No firefighters in quarantine or isolation. No COVID-19 exposures. DC Knight continues to be the example of what the COVID-19 Medical Officer should be.
- Lieutenant promotional exam preparation is in progress. We will again use Ret. Asst. Chief Ron Hiraki from our assessment center and utilize Renton Regional Fire Assistant Chief Roy Gunsolus, BC Erik Hammes, and Captain Dan Alexander in conducting our scenario-based tactical simulation.
- Apparatus 1200 (E151) required an extensive repair to the turbo/head gaskets and was out of service for approximately one week. It is back in service as of September 7.
- One of our recruits suffered a pectoral injury prior to attending academy. The District is working on options to determine our next steps.

Fire Prevention:

- There is a county-wide Stage 2 Burn Ban in effect. All recreational fires are restricted effective September 8.

Northshore Emergency Management Coalition (NEMCo):

- Registration for the NEMCo Emergency Preparedness Workshop on October 8 is full with 35 participants. A second workshop is scheduled for November 5.
- EM Lunak is coordinating a food drive for local area foodbanks on September 17. The food drive will be using NEMCo volunteers.
- NEMCo radio volunteers completed the reprogramming of the amateur radio equipment to include updates from regional partners.