

Manitoba Hydro

2023/24 & 2024/25

General Rate Application

Asset Management and Capital Panel

For the Public Utilities Board

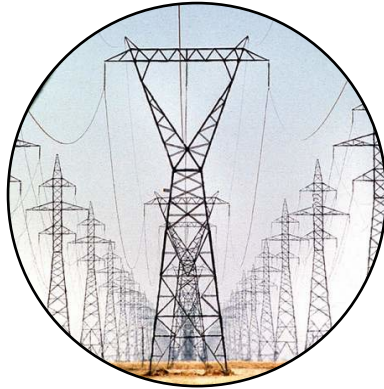
May 23/24, 2023

Outline

- Key Messages
- Aging Assets, Performance and Impact on Customers
- Asset Management, Maturity and Decision-Making
- Our Capital Plan and Bill Affordability

Manitoba Hydro's Assets

Asset Intensive Organization



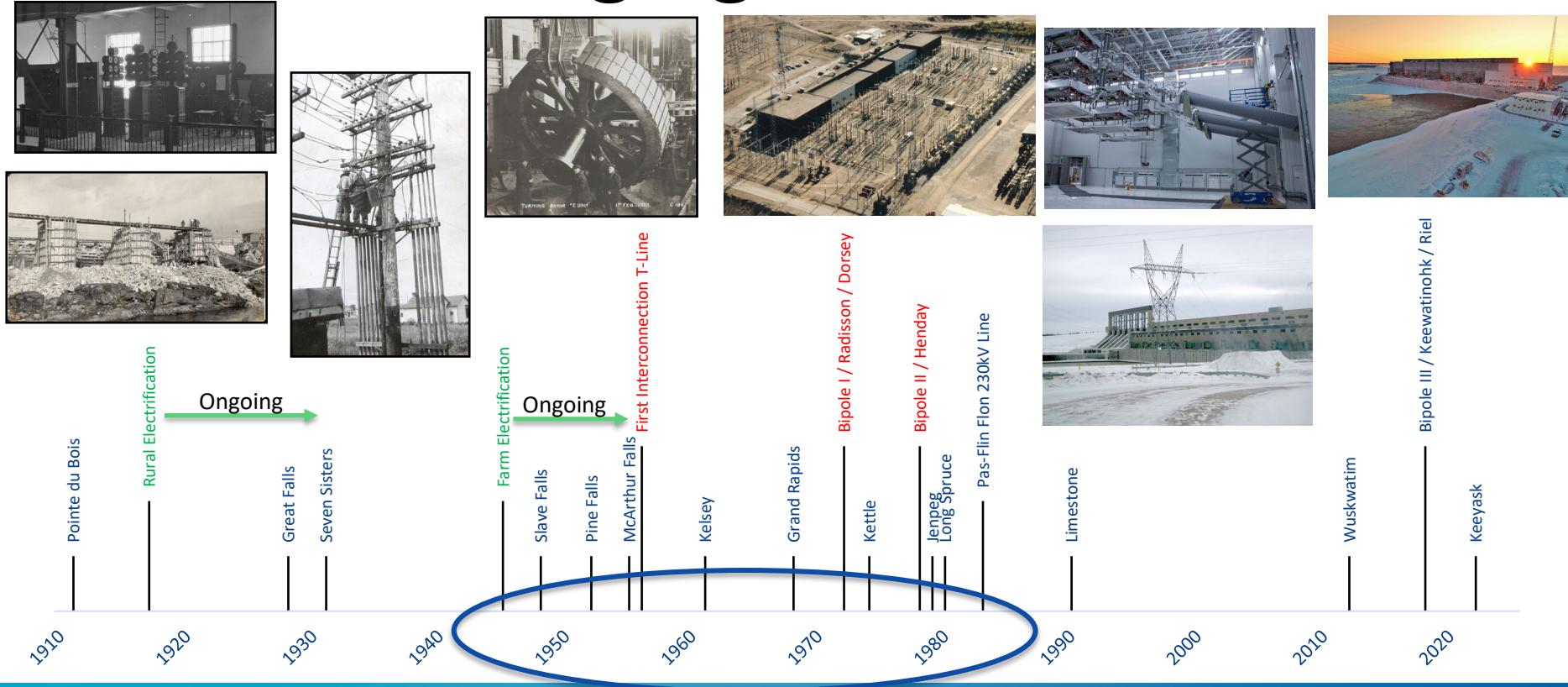
- \$29 Billion in assets
- Millions of assets
- Span the entire Province

Core Infrastructure & Assets are Aging

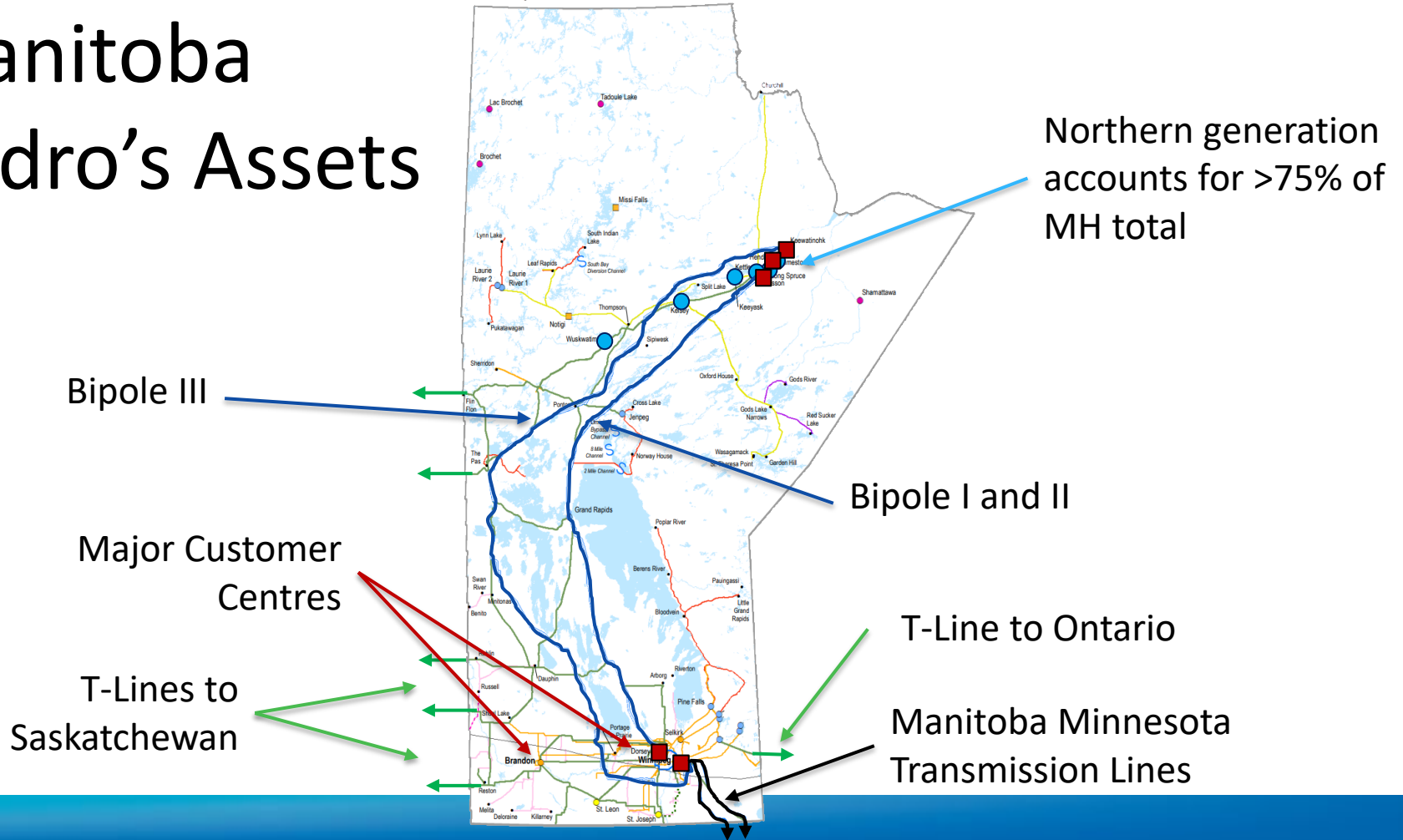


- Assets are core to our business
- Simple & complex assets
- Some over 100 years old

Aging Assets



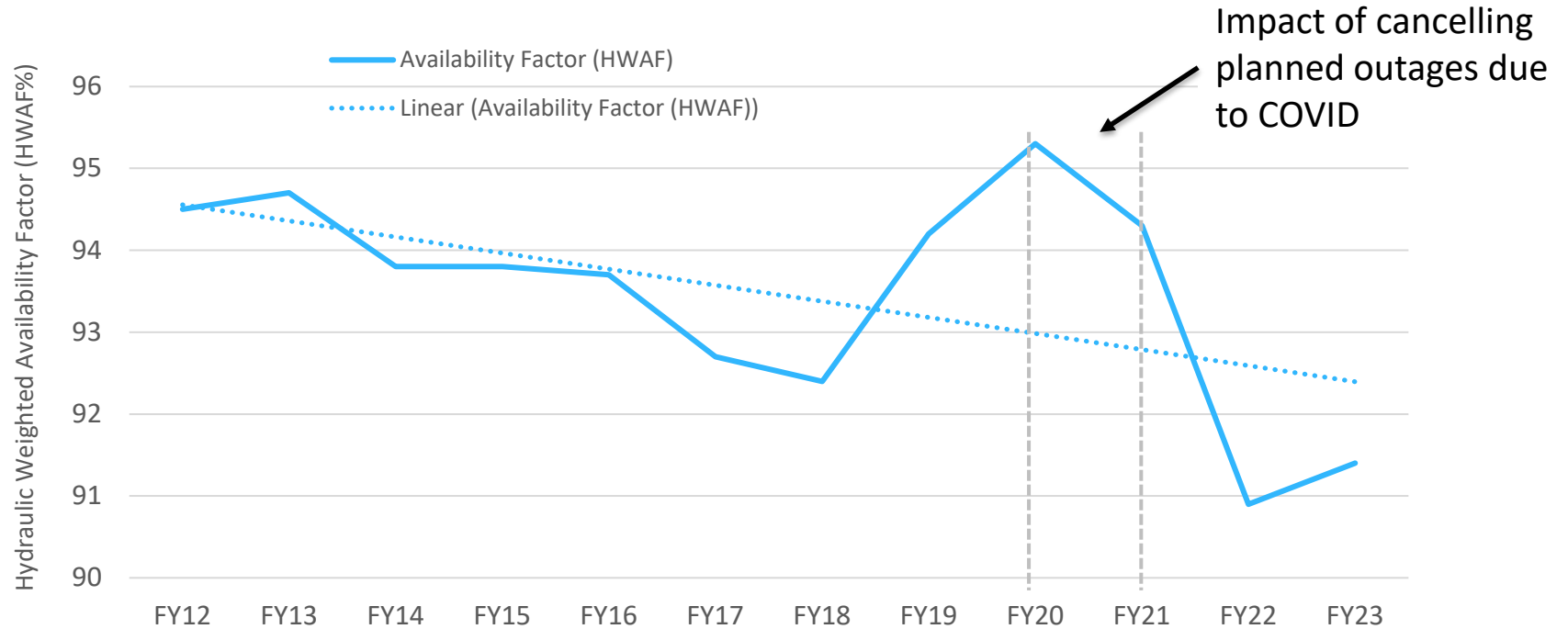
Manitoba Hydro's Assets



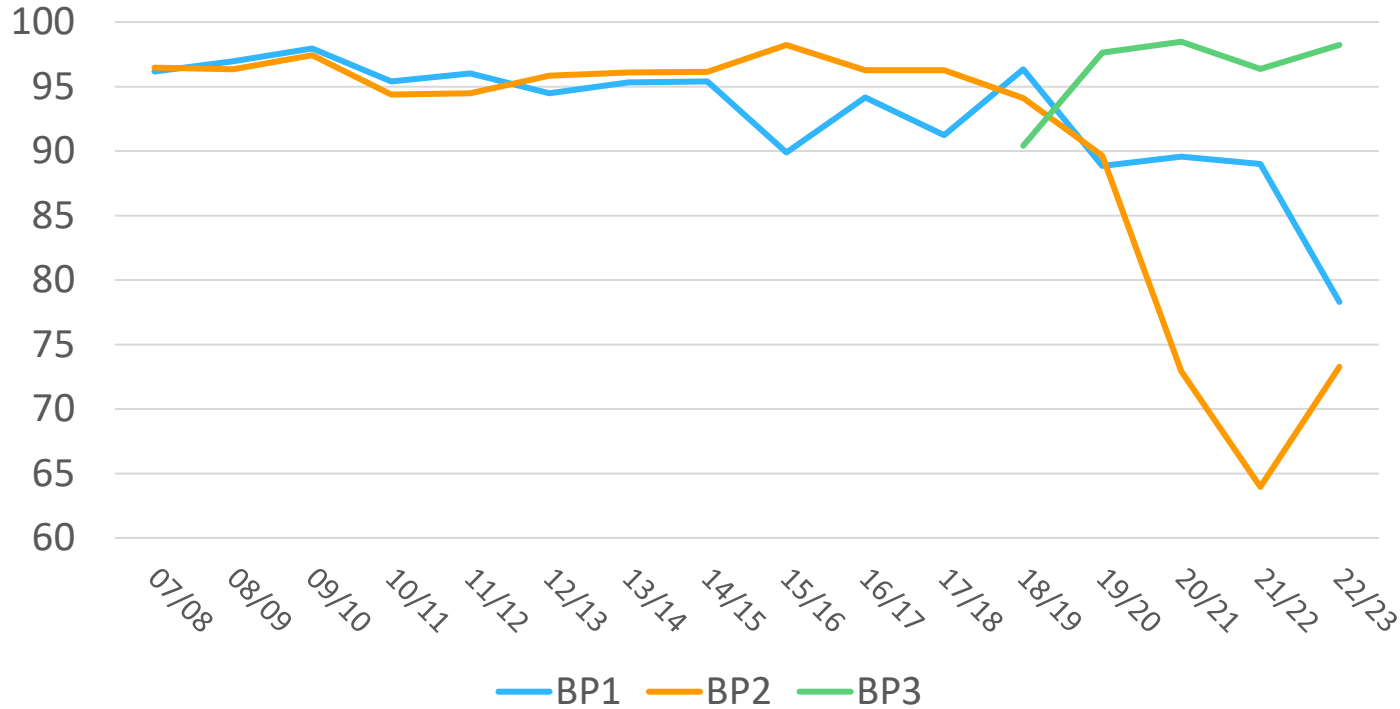
Asset Failures



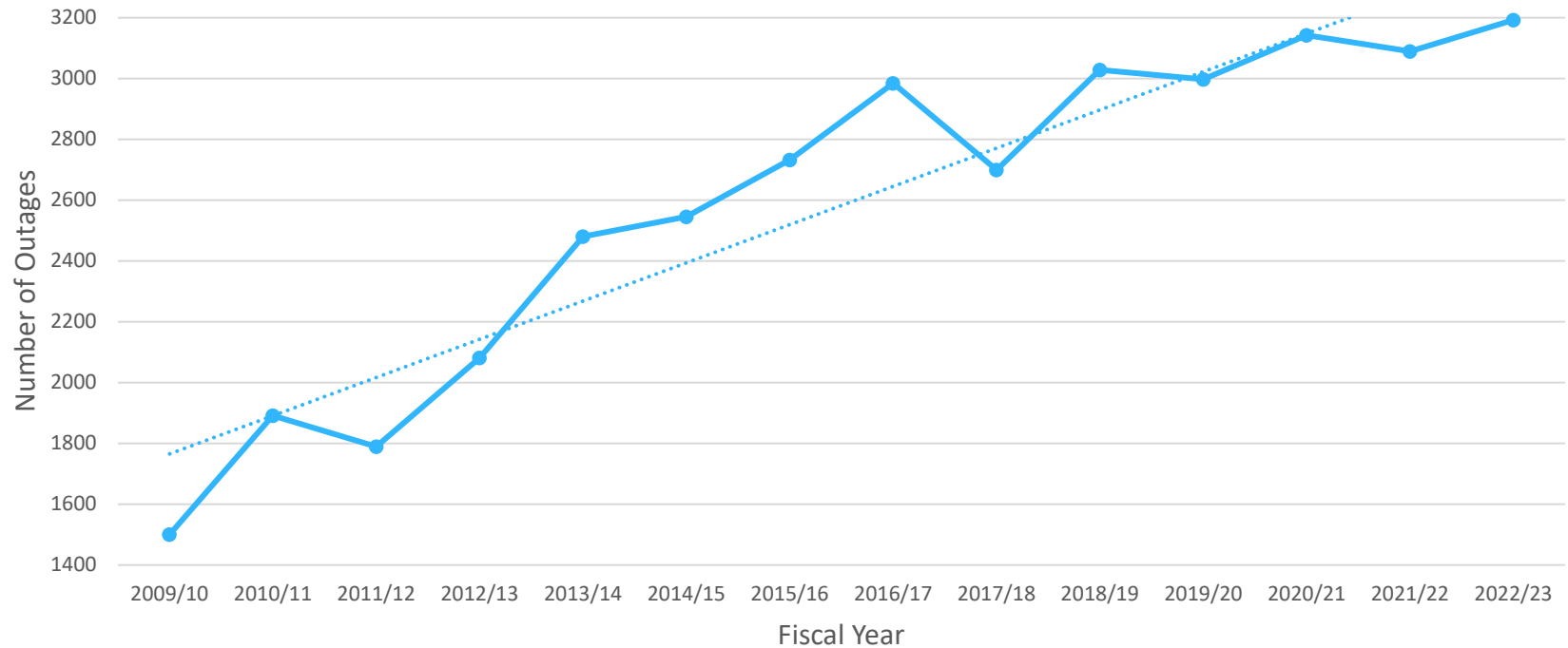
Trend of Hydraulic Availability



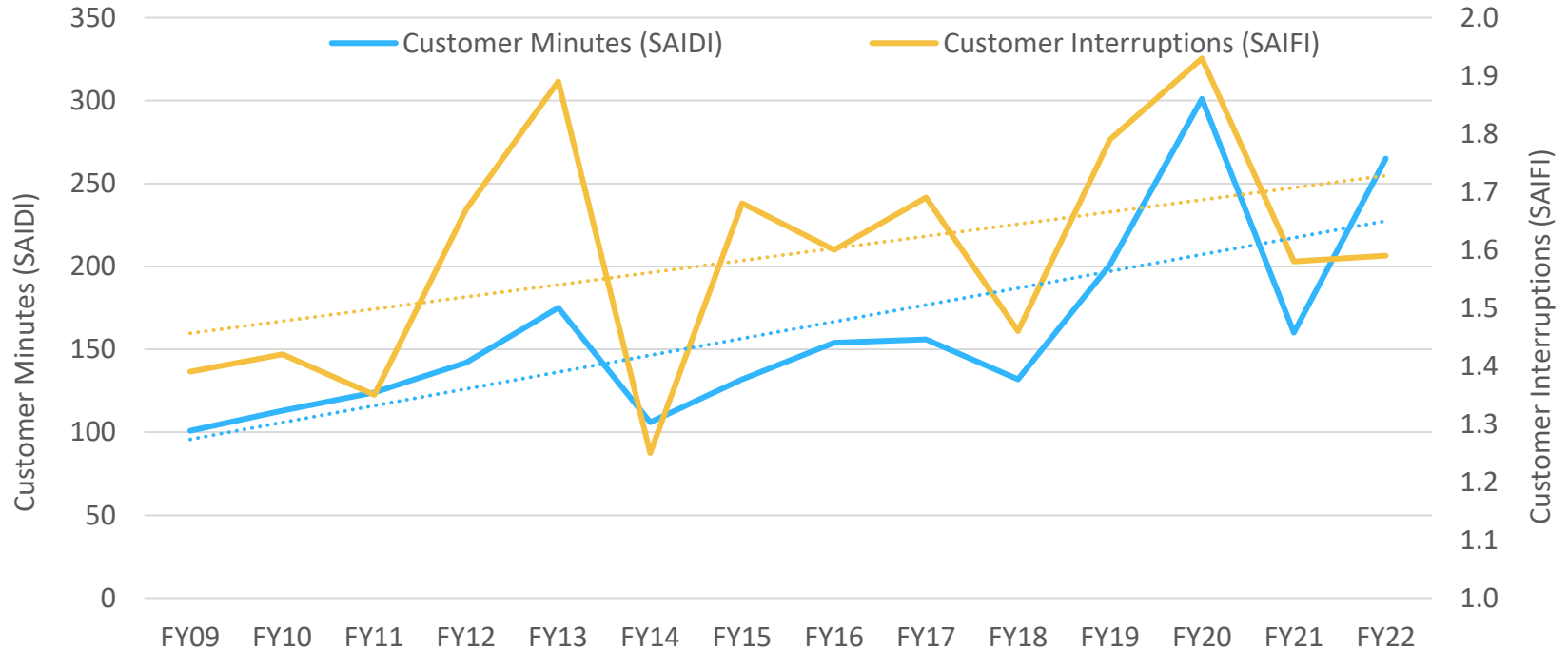
Bipole Availability



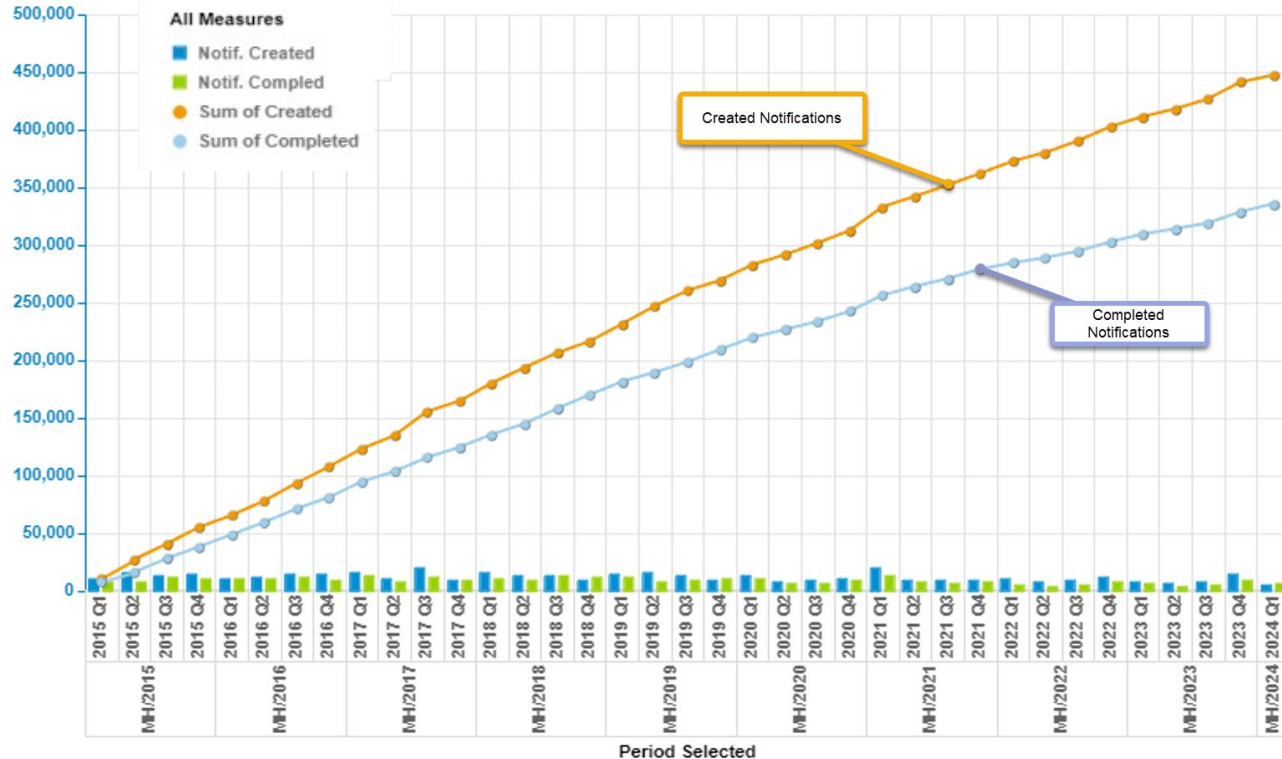
Outages due to Equipment Failures



Customer Reliability Trends

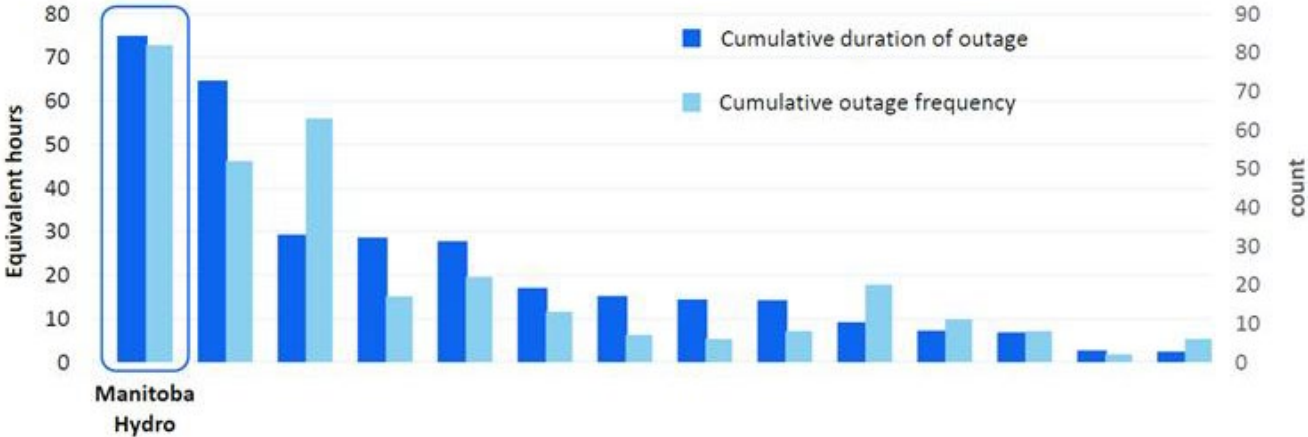


Reactive Work Notifications



Reliability at MH Impacts Customers

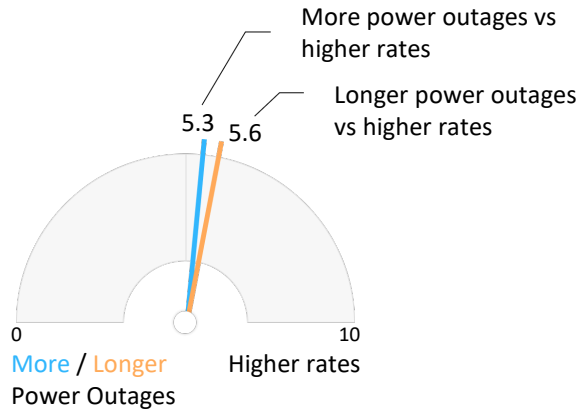
Utilities Performance 2020-2022



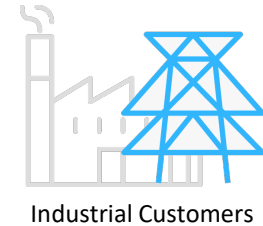
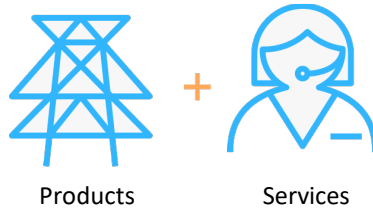
Outages related to Manitoba Hydro's declining performance resulted in more frequent downtime and longer duration of downtime than any other provider on the Keystone System



Customers Are Asking for Balance



Upward trend in equipment failures is causing **increased frequency and duration of customer outages**



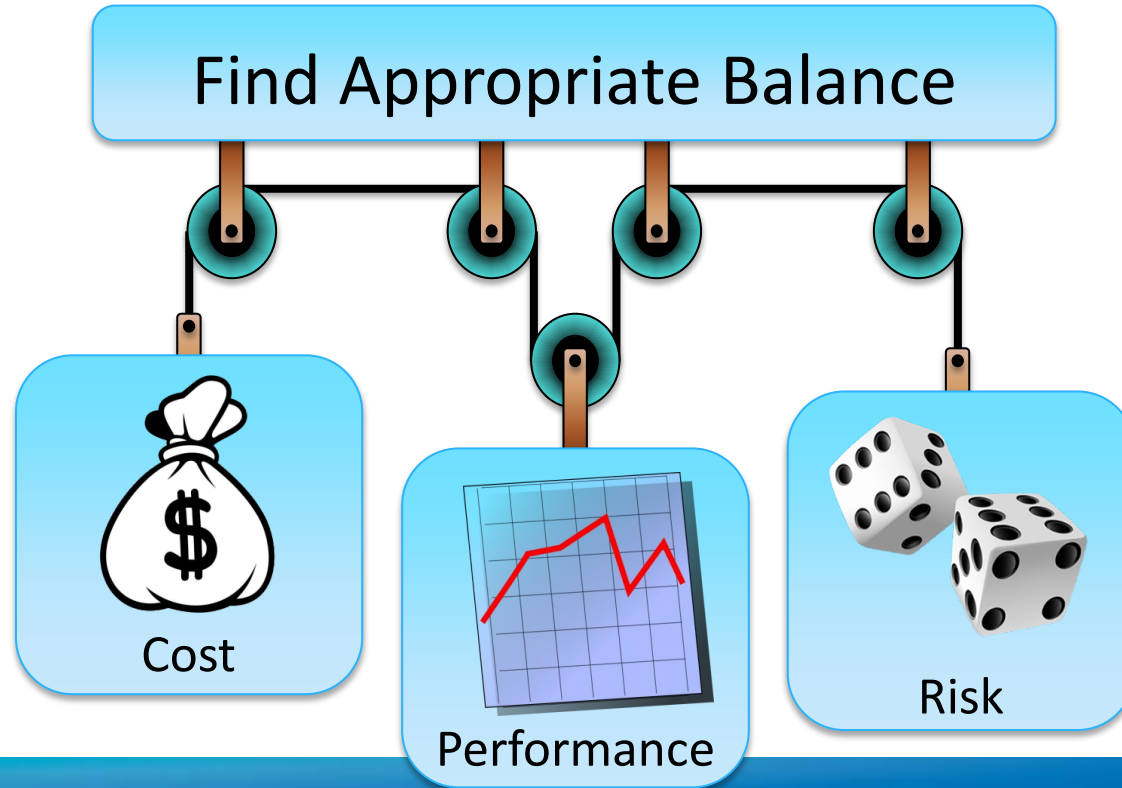
2019 Customer Value Perception survey found customers indicate a balance between rates and reliability – **leaning in favor of spending what is necessary** to reduce the number and length of outages.

2022 Leger Reputation Study found that **“reliability of products and services”** was considered the most important attribute when forming opinions of Manitoba Hydro.

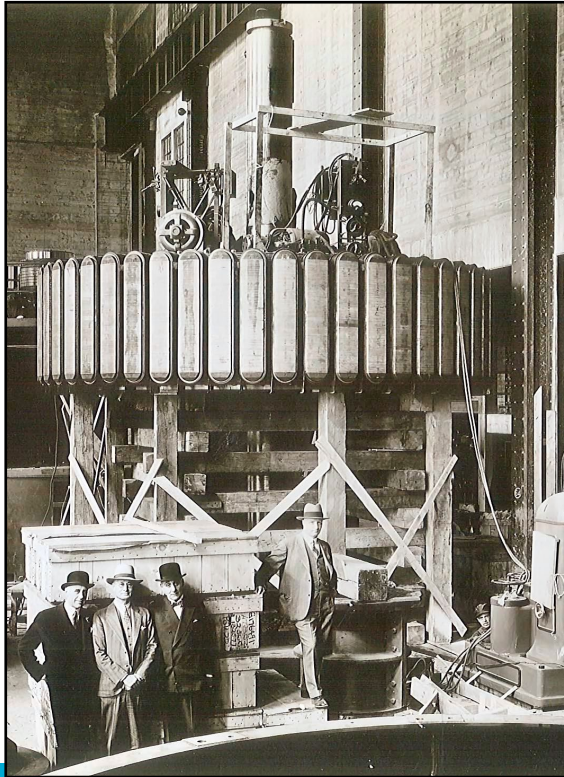
“It is far more costly to industrial customers to be delayed in getting their new service connected, or to suffer from outages, or voltage instability, or other power quality issues that arise, than it is beneficial to have the lowest rates.”

~MIPUG

Fundamentals of Asset Management



Why Asset Management



- Aging assets needing intervention
- Meet the customer expectations while minimizing costs and maximizing value
- Effectively manage constraints
 - Obtain maximum value within constraints and;
 - Understand the impact of constraints and modify when prudent
- Understand risk and risk trends to ensure sustainability

Asset Management at MH

Foundation Building Accomplishments

AM Policy & Leadership Endorsement

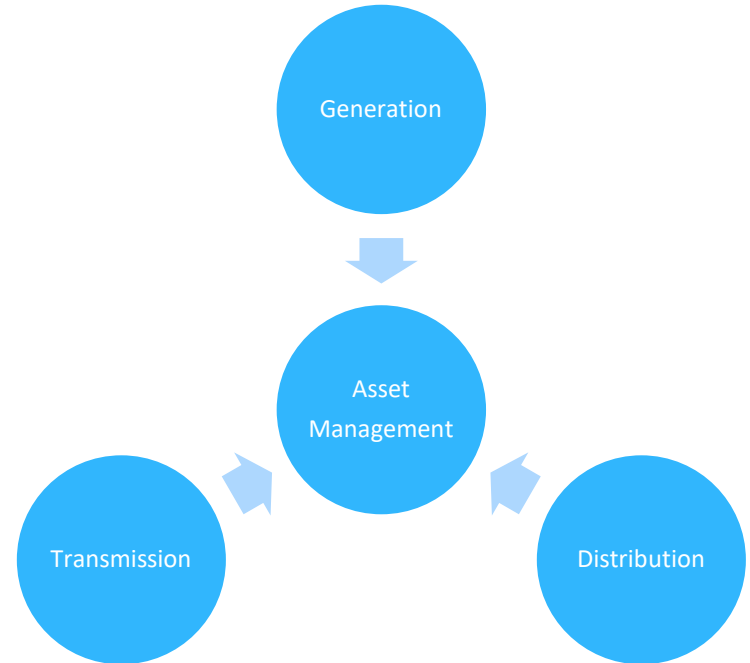
Corporate Value Framework refinement

Strategic Asset Management Plan (SAMP)

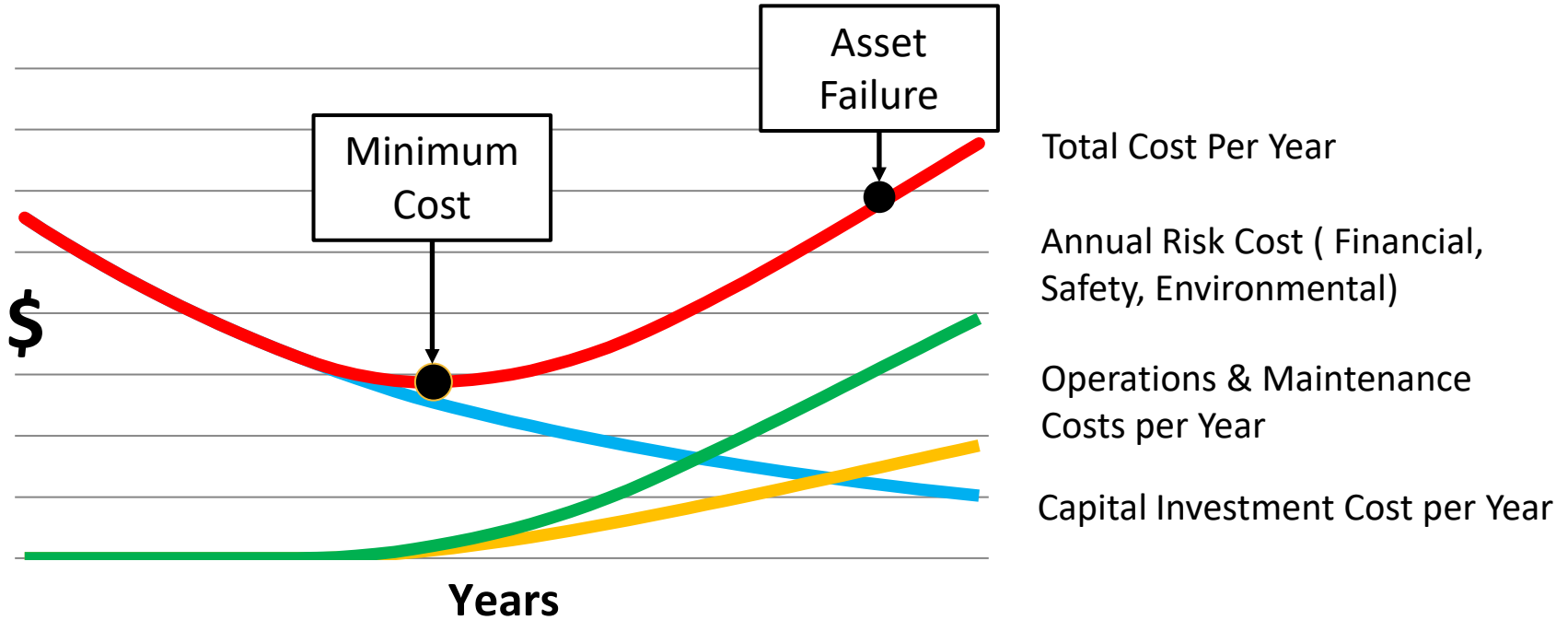
Asset Risk Management Framework

Refined Long-Term Planning

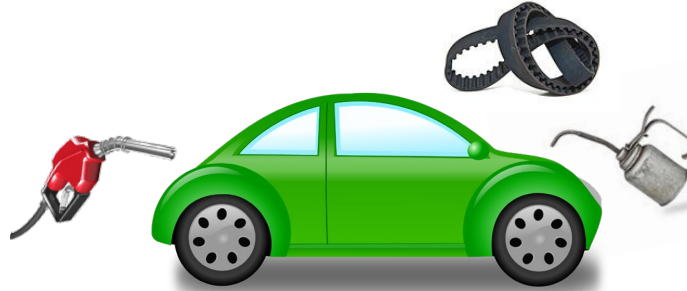
Organization Restructured Around AM



Asset Lifecycle



Asset Lifecycle



Determine:

- Need
- Critical features
- Budget

Operating Cost:

- Gas
- Oil changes
- Other mtce

Collect Data:

- Age
- Mileage
- Condition

Failure

- Avoid reactive costs and risks
- Be Proactive!



Grand Rapids GS - Unit 4



Current (ongoing) condition:

- Cracks found on all blades. Requires:
 - 100's of hours of welding
 - Inspection/repair every 1-2 years

Nearly out of time to address proactively

Proactive replacement:

- Outage cost \$20M

Reactive replacement:

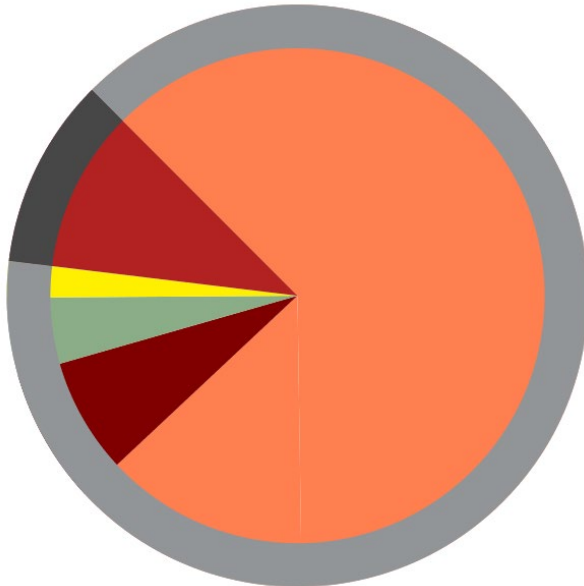
- Outage cost \$30 – 60M
- Chance of oil spill directly into river
- Chance of collateral damage



Asset Investment Planning

Draft Investment Value

GR Unit 4 Major Overhaul (Shell)



Value Measure	Value Points
Lost Generation Risk	104,865
Financial Risk	10,478
Generation Revenue Benefit	6,001
O&M Financial Benefits	2,783
Environmental Risk	21
Total Cost	-13,123
Total Value	111,025

Short and Long-Term Planning

Short-Term:

- Asset Specific
- 3-5 Year Outlook



Long-Term:

- Population-based
- Intervention rates
- Future risks & opportunities
- 20 Year Outlook

Spending Projection Analysis

- **Long term** spending projections determined by age of population
- Asset Health Indices (AHIs) can be used to refine long term planning
- MH is working to build a sustainable and harmonized set of enterprise Asset health indices (AHIs)

Demographics			
Age (Yrs)	# of Assets	Percentage	Age Category
0 to 10	155	28%	New
10 to 20	621		
20 to 30	347	23%	Moderate
30 to 40	290		
40 to 50	210	21%	Mature
50 to 60	351		
60 to 70	432	28%	Beyond Economic life
70 to 80	290		
80 to 90	37		
Grand Total	2,733	100%	

Asset Sustainment Examples



Underground Cables

- Economic life: 30-40 years
- Current replacement rate: 160 years

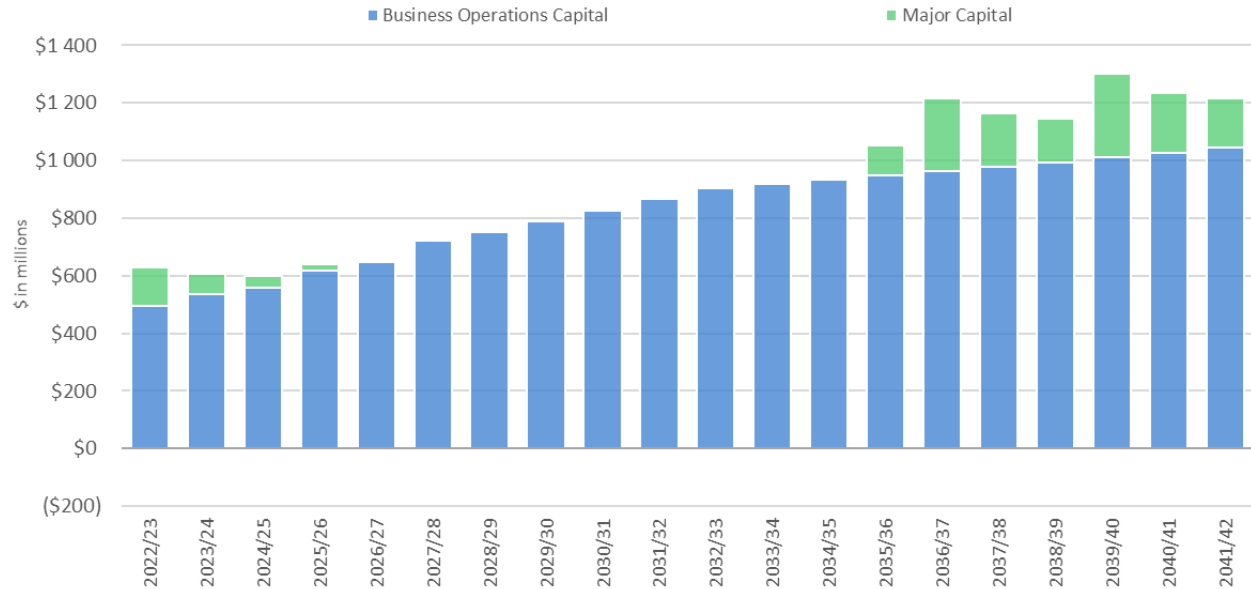


Wood Poles

- Economic life: 70 years
- Current replacement rate: 200 years

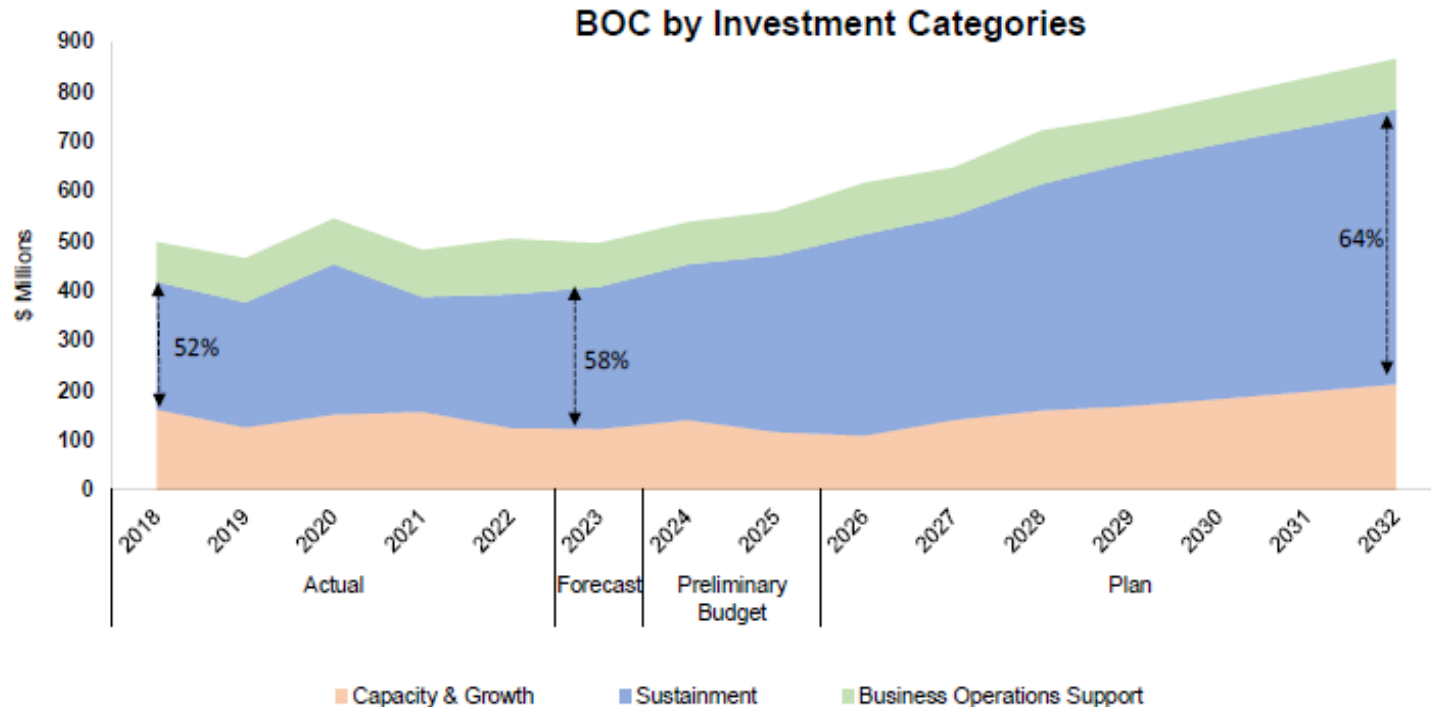
Capital Expenditure Plan (C23)

- Increased investment is required to **maintain performance** and **mitigate risks** related to safety, reliability, compliance, and the environment
- Majority (>90%) of forecasted capital expenditures are related to Business Operations Capital (BOC)
- Future resource requirements (identified as Major Capital) are forecasted in the later part of the forecast
- Capital expenditure plan is **rigorously planned, reviewed, and tested**



Business Operations Capital

- Sustainment of existing assets remains the primary focus of Manitoba Hydro's BOC expenditures
- Total BOC expenditures in C23 are necessarily higher (compared to CEF16) to address asset sustainment and capacity & growth requirements



Comparison of BOC – C23 and CEF16

Business Operations Capital (in millions of dollars)								
	Amended Financial Forecast Scenario		MIPUG Scenario December 21, 2017 (MH Exhibit #93)		GREP	MIPUG Scenario (MH Exhibit #93) and GREP included	Change	Cumulative Change
2019/20	Actual	\$545	Forecast	\$516	\$37	\$553	(\$8)	(\$8)
2020/21	Actual	482	Forecast	511	31	543	(61)	(69)
2021/22	Actual	504	Forecast	499	28	528	(24)	(93)
2022/23	Forecast	495	Forecast	521	28	549	(53)	(146)
2023/24	Forecast	538	Forecast	544	17	561	(23)	(169)
2024/25	Forecast	559	Forecast	616	2	618	(58)	(227)
2025/26	Forecast	617	Forecast	640	2	643	(26)	(253)
2026/27	Forecast	647	Forecast	659	4	663	(16)	(269)
2027/28	Forecast	722	Forecast	671	-	671	51	(218)
2028/29	Forecast	750	Forecast	697	-	697	53	(165)
2029/30	Forecast	788	Forecast	688	-	688	100	(65)
2030/31	Forecast	827	Forecast	727	-	727	100	35
2031/32	Forecast	866	Forecast	734	-	734	131	167
2032/33	Forecast	905	Forecast	748	-	748	156	323
2033/34	Forecast	919	Forecast	760	-	760	159	482
2034/35	Forecast	933	Forecast	835	-	835	98	580
2035/36	Forecast	948	Forecast	852	-	852	96	676

- The Gillam Redevelopment Expansion Project (GREP) and the Grand Rapids Fish Hatchery project, were previously included as Major Capital Projects, whereas in C23 they are part of BOC
- BOC spending year-over-year is lower in the Amended Financial Forecast Scenario (C23) from 2019/20 to 2026/27 as compared to MH Exhibit #93 (CEF16)
- Cumulative BOC spending is lower in the Amended Financial Forecast Scenario (C23) until 2030/31

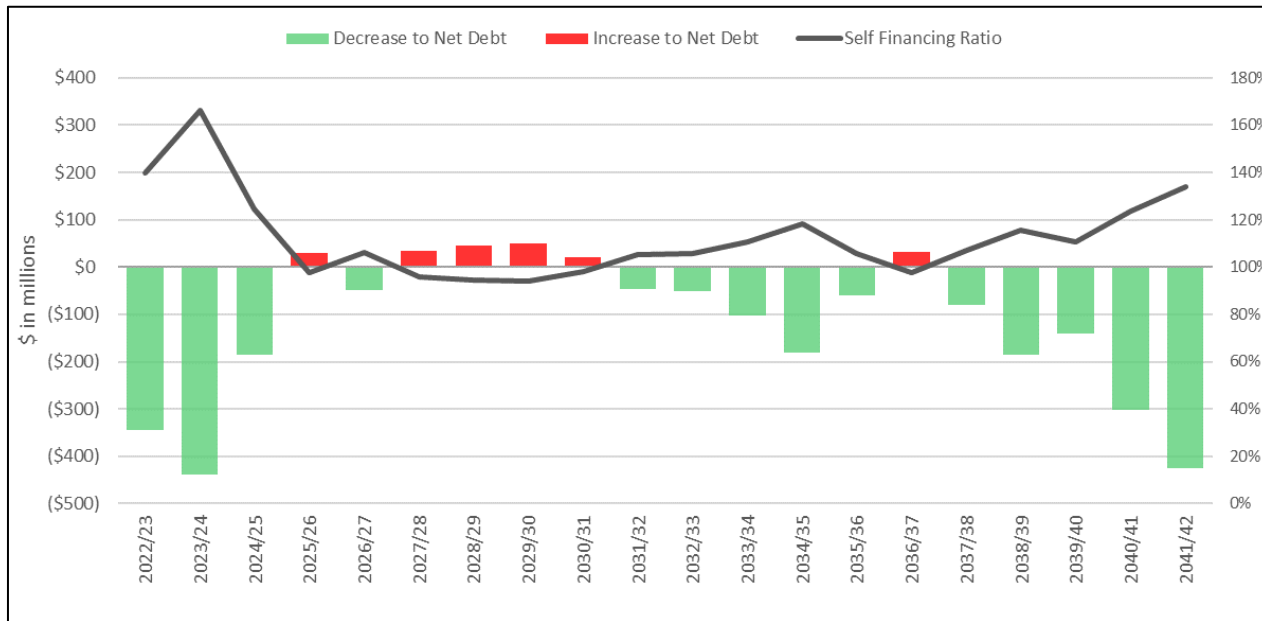
Comparison of BOC – C23 and CEF16

CEF16 (\$ Millions)	Total Project Cost	2017 Outlook	2018 Forecast	2019 Forecast	2017 - 2026 10 Year Total	2017 - 2036 20 Year Total
Electric Business Operations Capital						
Executing Projects	2,765	394	325	211	1,375	1,413
Potential Investments	417	0	0	6	351	417
Programs	NA	243	265	290	2,999	6,725
Planning Investments	NA	-	-	26	1,246	4,030
Portfolio Adjustments	NA	(63)	(64)	(16)	(508)	249
Unallocated Year End Outlook Adjustment - Electric		(45)			(45)	(45)
Total Electric Business Operations Capital		529	526	517	5,418	12,790

C23 (\$ Millions)	Total Project Cost	2022/23 Forecast	2023/24 Preliminary Budget	2024/25 Preliminary Budget	2022/23- 2031/32 10 Year Total	2022/23- 2041/42 20 Year Total
Electric Business Operations Capital						
Executing Projects	2,291	350	289	228	1,264	1,265
Potential Investments	146	-	-	4	145	146
Programs	NA	265	269	269	2,826	6,233
Portfolio Adjustments	NA	(120)	(21)	58	2,573	8,886
Total Electric Business Operations Capital		495	538	559	6,809	16,530

- Capital planning model applied in developing C23 is the same as applied for CEF16 and other capital expenditure plans.
- Executing projects represent spending in the near term with longer term spending captured in programs, planning investments and portfolio adjustments.

Funding Investments Using Cash from Operations



- Manitoba Hydro seeks to make BOC investments using cash from operations (or internally generated funds)
- Whether measured using a Self-Financing Ratio or a Capital Coverage Ratio, it is a long-standing financial objective to fund BOC with internally generated funds (cash)
- Proposed 2% rate path ensures BOC investments are primarily made using cash from operations

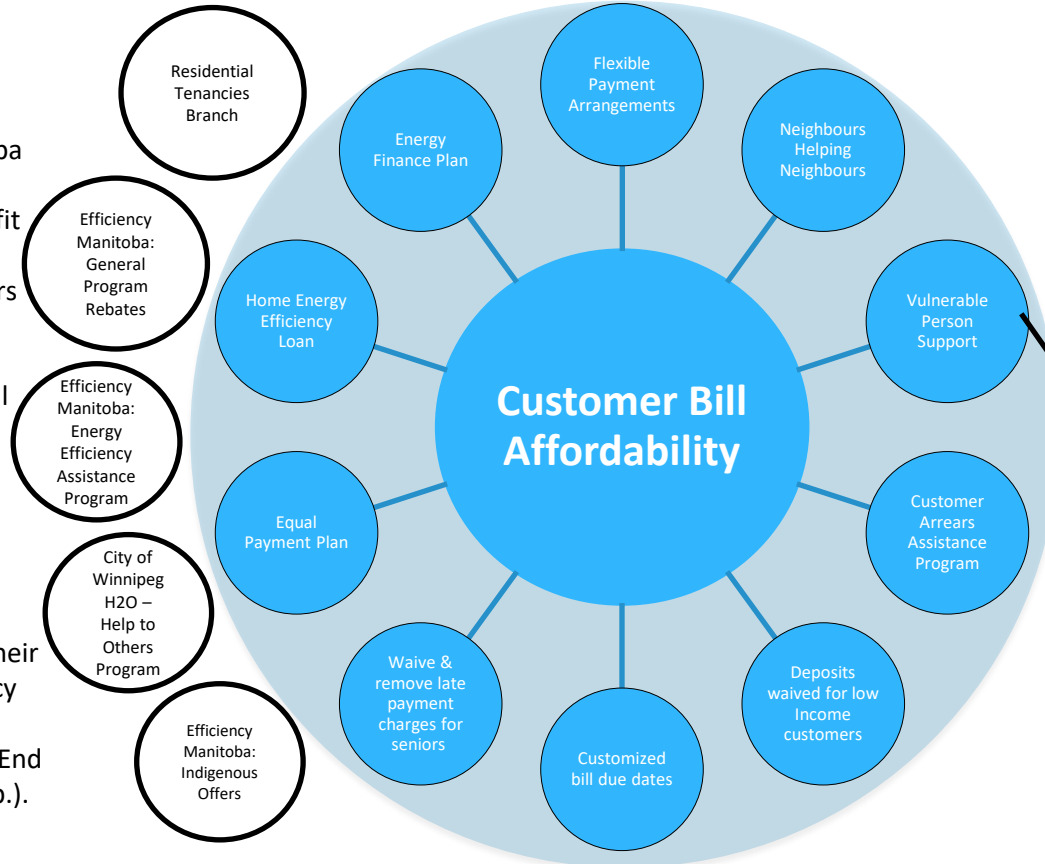
Holistic Bill Affordability

Bundling

Stacking multiple Manitoba Hydro programs to maximize customer benefit (e.g.; Flexible Payment Arrangements, Neighbours Helping Neighbours, Customer Arrears Assistance Program, Equal Payment Plan).

Referrals

Through listening to customers, referrals to various programs and supports offered within their community (e.g.; Efficiency Manitoba programs, Winnipeg Harvest, North End Community Renewal Corp.).



When speaking with struggling customers, Manitoba Hydro provides referrals to various organizations that provide the following supports: financial, housing, mental health, general health, food security, youth, and legal.

Organizations include but not limited to:

- North End Community Renewal Corp.
- Spence Neighbourhood Association
- Brandon Neighbourhood Renewal Corp.
- West Broadway Community Org.
- New Journey Housing
- Renters Rent Assist
- Manitoba Non-Profit Housing Assoc.
- Veteran Emergency Fund
- War Veterans Assistance Fund
- WRHA Crisis Response Centre
- WRHA Home Care Services
- Clinic Crisis Line
- Gambling Helpline
- Siloam Mission
- Mount Carmel Clinic
- Harvest Manitoba

Increasing Choice and Convenience to Customers

Digital Options

Manitoba Hydro provides multiple digital self-service channels to our customers

Digital options provide convenience, choice and accessibility to our customers.

Improved Customer Service

Digital self-service allows customer service staff to spend more time with customers seeking live-agent support.

Residential

- **Face-to-Face Customer Help Desk**
 - 900 interactions since inception (March 2023)
 - Rural CSC's open to public
- **First Nation Account Team & dedicated phone number**
 - 8 dedicated full-time staff
 - over 7,000 calls annually
- **Employee Linguist Program**
 - 35 supported languages
- **Customer Engagement Centre**
 - In 2022 approximately 548,000 live agent calls and 80,000 emails handled.
- **Partnering with Manitoba Real Estate Association**
 - New account set-up materials
- **Customer Service Centre Management meetings with First Nation leadership**
- **Technical energy support team**
 - Assist with customer energy related inquiries
- **Partnering with the Mechanical Contracting community**
 - Providing contractors with space and water heating information for customers.
 - Information viewed over 1,800 times in last year.

Commercial & Industrial

- **4 Key Account Representatives**
 - Dedicated support for Manitoba's 10 largest industrial consumers.
- **12 Major Account Representatives**
 - Dedicated support for large commercial consumers
 - Approximately 250-300 customers.
- **2 Agricultural Energy Service Advisors**
- **20 Energy Service Advisors**
 - Personalized support for all other commercial customers.
- **Building systems technical support team.**
 - 4 dedicated staff
- **Customer Service Centres in rural Manitoba (including remote communities) open to commercial customers.**
- **Customer Service Centre Management meetings with Commercial & Industrial customers as required.**

Thank You

