Climate Change Impacts on Levels of Service – Lessons Learned at the Town of Halton Hills

AMONTario Climate Change & Asset Management Conference

February 22, 2021

Town of Halton Hills – "Small town living at its best!"

- The Town of Halton Hills is located in Ontario, with a population of approximately 62,000
- Two urban centers: Georgetown and Acton
- Three hamlets – Glen Williams, Stewarttown and Norval – and several smaller settlements.
- Town of Halton Hills has long been recognized for its natural beauty, active agricultural community, high quality of life and proximity to major centers.

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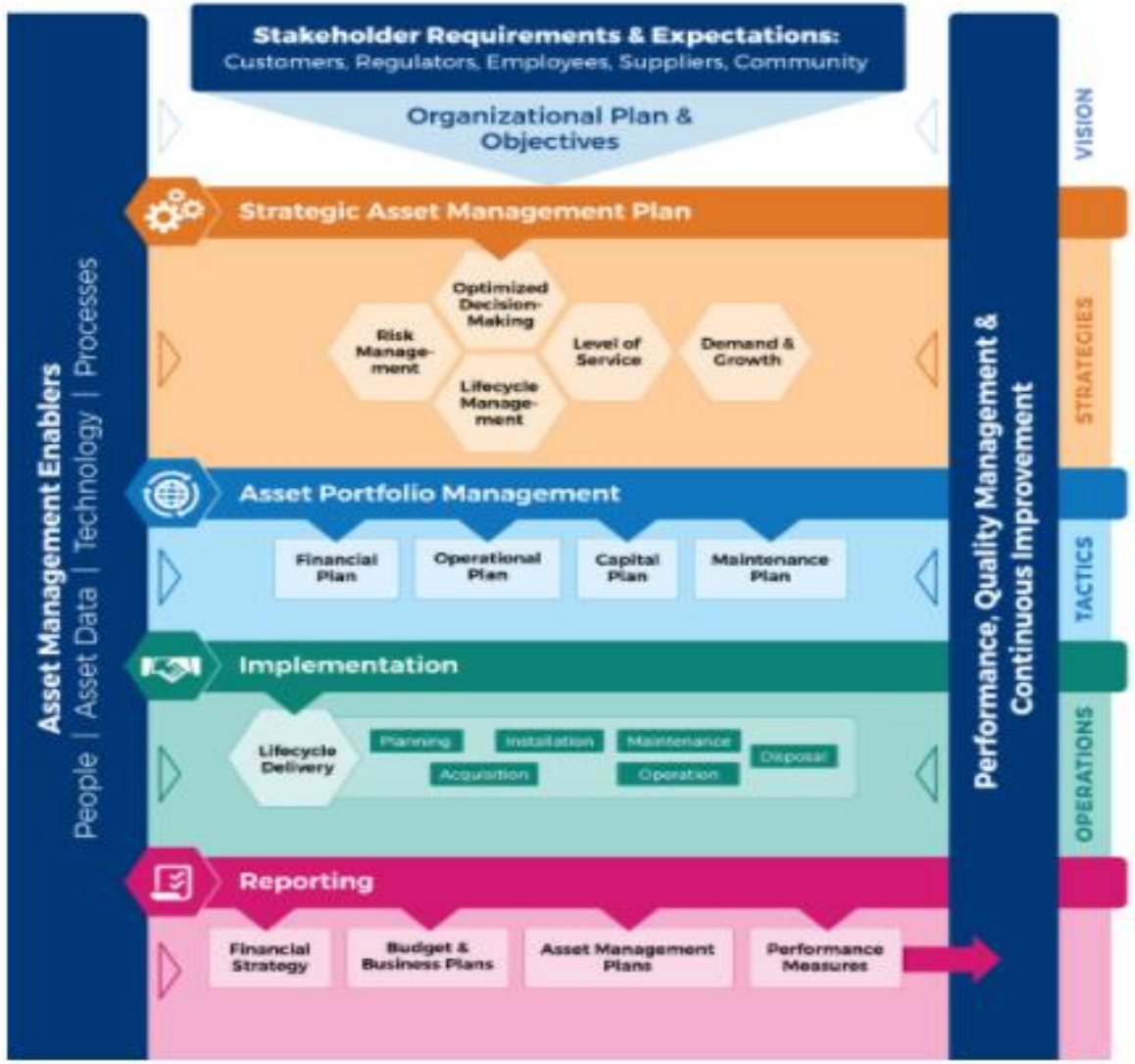
TOHH - Corporate Asset Management Framework



Asset Management & Climate Change

- May 2019 – The Town Declared a Climate Change Emergency
- Set at target of achieving Net Zero by 2030

Town of Halton Hills Lives Green

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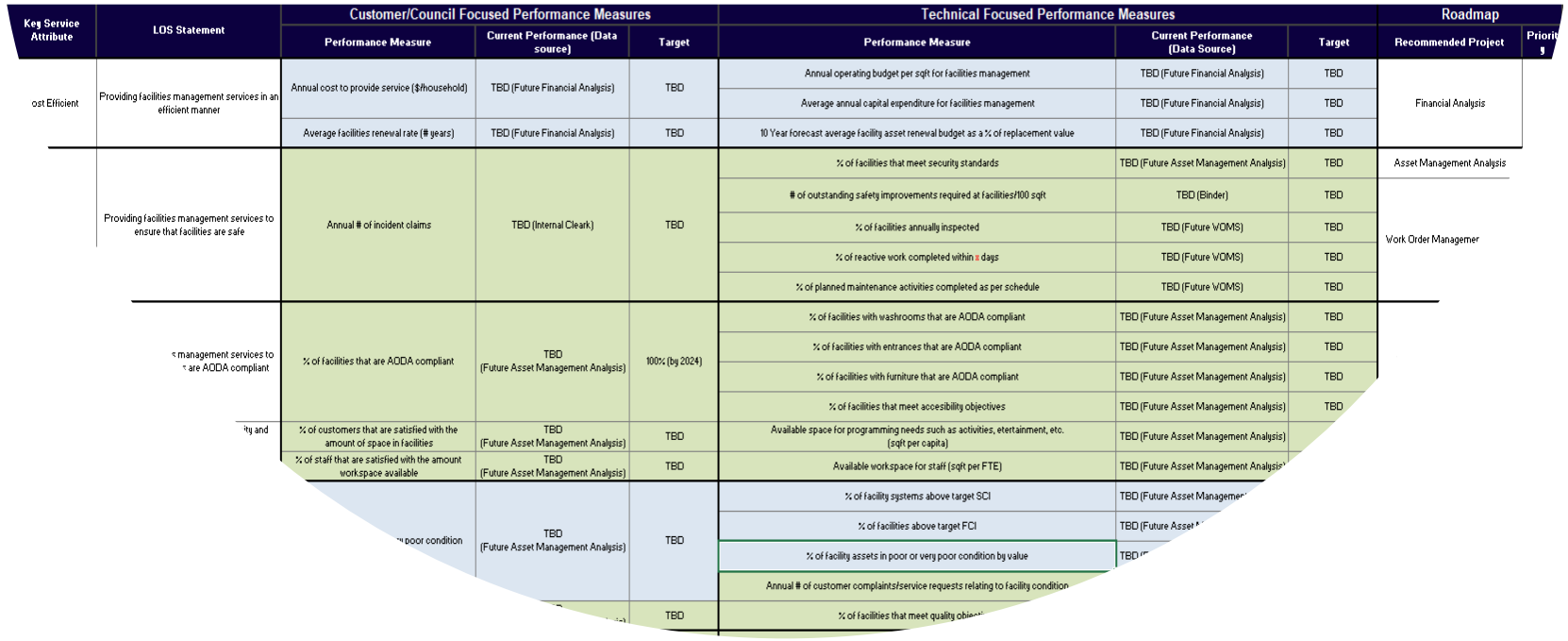
Pilot Project



Key Service Attribute	LOS Statement	Customer/Council Focused Performance Measures			Technical Focused Performance Measures			Roadmap	
		Performance Measure	Current Performance (Data source)	Target	Performance Measure	Current Performance (Data Source)	Target	Recommended Project	Priority
ost Efficient	Providing facilities management services in an efficient manner	Annual cost to provide service ($/household)	TBD (Future Financial Analysis)	TBD	Annual operating budget per sqft for facilities management	TBD (Future Financial Analysis)	TBD	Financial Analysis	
					Average annual capital expenditure for facilities management	TBD (Future Financial Analysis)	TBD		
		Average facilities renewal rate (# years)	TBD (Future Financial Analysis)	TBD	10 Year forecast average facility asset renewal budget as a % of replacement value	TBD (Future Financial Analysis)	TBD		
	Providing facilities management services to ensure that facilities are safe	Annual # of incident claims	TBD (Internal Cleark)	TBD	% of facilities that meet security standards	TBD (Future Asset Management Analysis)	TBD	Asset Management Analysis	
					# of outstanding safety improvements required at facilities/100 sqft	TBD (Binder)	TBD		
					% of facilities annually inspected	TBD (Future WOMS)	TBD	Work Order Managemer	
					% of reactive work completed within x days	TBD (Future WOMS)	TBD		
					% of planned maintenance activities completed as per schedule	TBD (Future WOMS)	TBD		
	management services to are AODA compliant	% of facilities that are AODA compliant	TBD (Future Asset Management Analysis)	100% (by 2024)	% of facilities with washrooms that are AODA compliant	TBD (Future Asset Management Analysis)	TBD		
					% of facilities with entrances that are AODA compliant	TBD (Future Asset Management Analysis)	TBD		
					% of facilities with furniture that are AODA compliant	TBD (Future Asset Management Analysis)	TBD		
					% of facilities that meet accesibility objectives	TBD (Future Asset Management Analysis)	TBD		
	ity and	% of customers that are satisfied with the amount of space in facilities	TBD (Future Asset Management Analysis)	TBD	Available space for programming needs such as activities, etertainment, etc. (sqft per capita)	TBD (Future Asset Management Analysis)			
		% of staff that are satisfied with the amount workspace available	TBD (Future Asset Management Analysis)	TBD	Available workspace for staff (sqft per FTE)	TBD (Future Asset Management Analysis			
					% of facility systems above target SCI	TBD (Future Asset Managemer			
					% of facilities above target FCI	TBD (Future Asset			
		poor condition	TBD (Future Asset Management Analysis)	TBD	% of facility assets in poor or very poor condition by value	TBD			
					Annual # of customer complaints/service requests relating to facility condition				
				TBD	% of facilities that meet quality obje				

- Background Work
- Review Current LoS Framework – Key Service Attributes
- Report Metrics

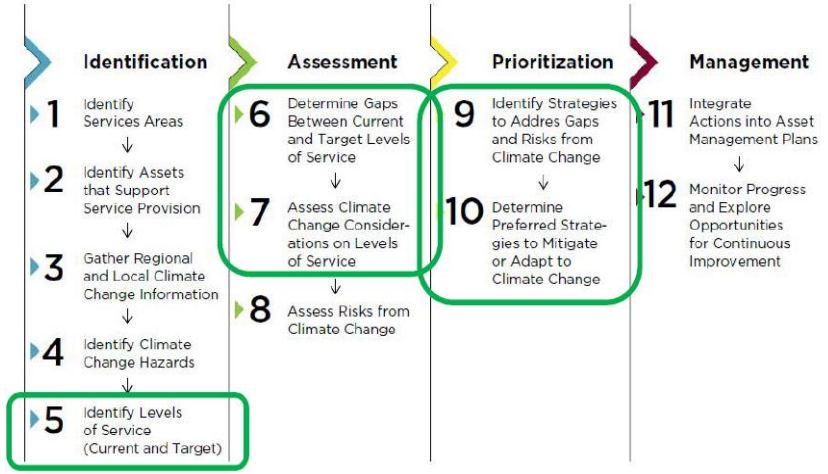
Key Service Attributes

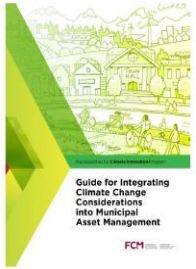
Service Attributes	
Safety	Providing a safe environment for staff and customers.
Accessibility	The ease of access to services such as the quantity per capita, proximity and allowance for customer of different abilities to access and use a service provided by the City.
Reliability	The service is available as advertised. Often measured as interruptions, delays and reductions to service. Sometimes considered alongside capacity/availability.
Quality	The quality of the service delivery provided by the City, and the interaction between City staff and customers. Meeting functional and aesthetic needs.
Environmental Stewardship	Environmental sustainability goals such as waste minimization, water/land/air pollution and greenhouse gas emissions.

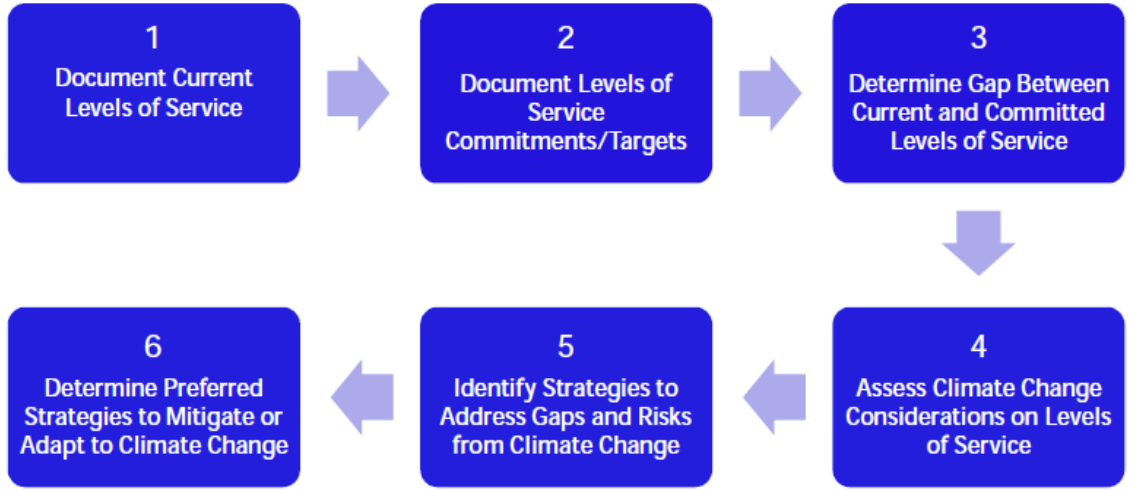
Town Staff

- Asset Management Team
- Climate Change Team
- Recreation Facilities Management
- Facilities Operational Staff

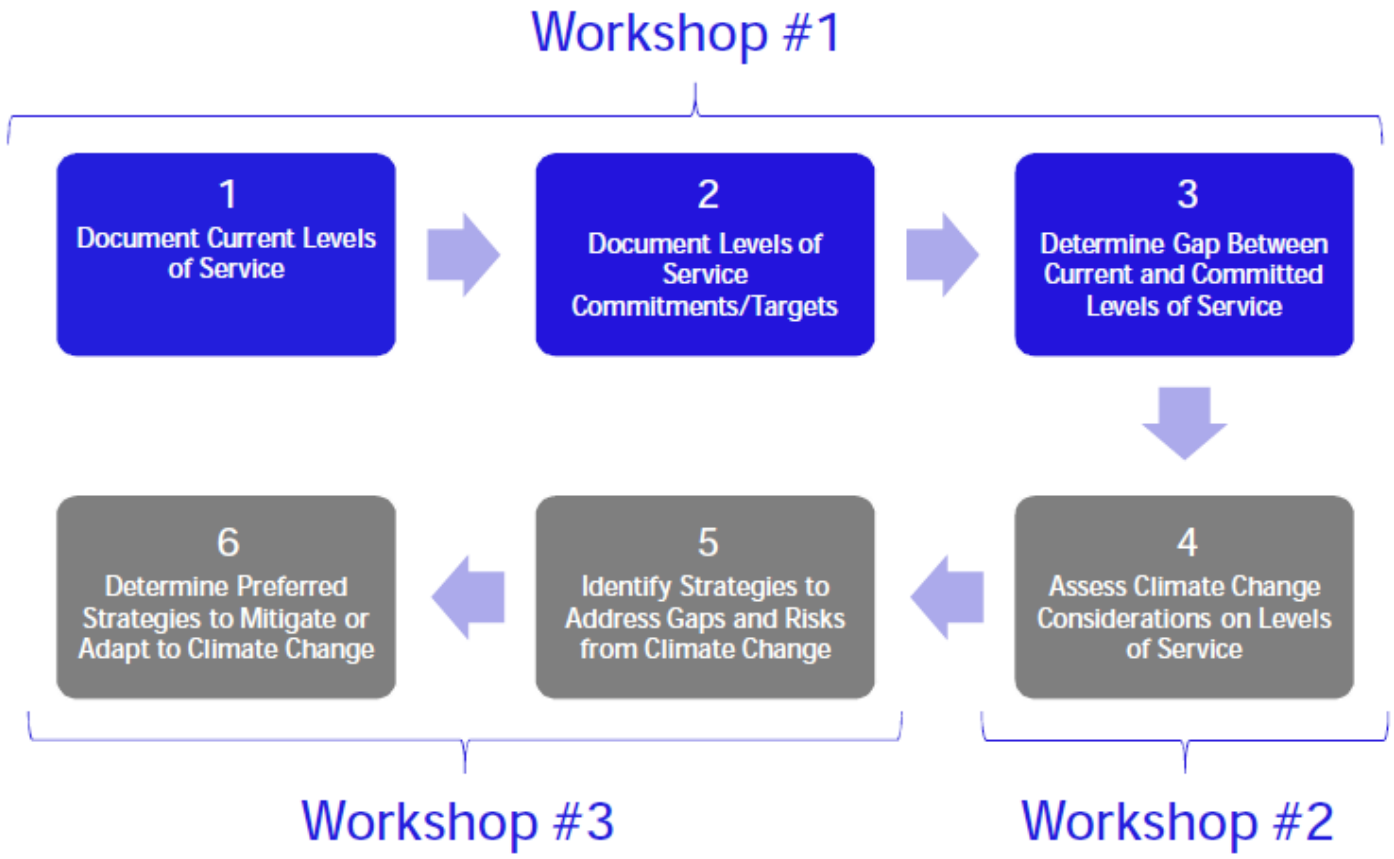
Methodology



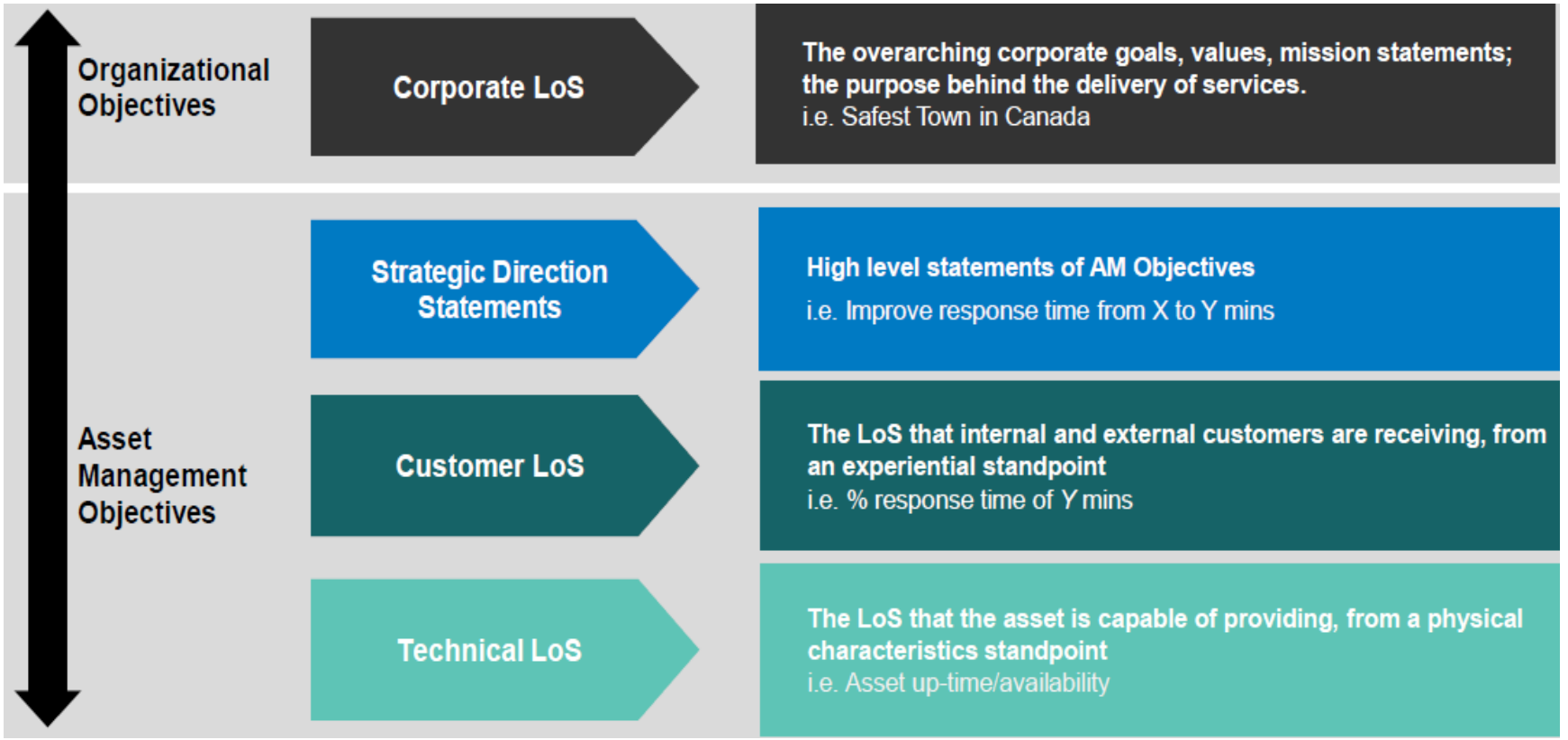




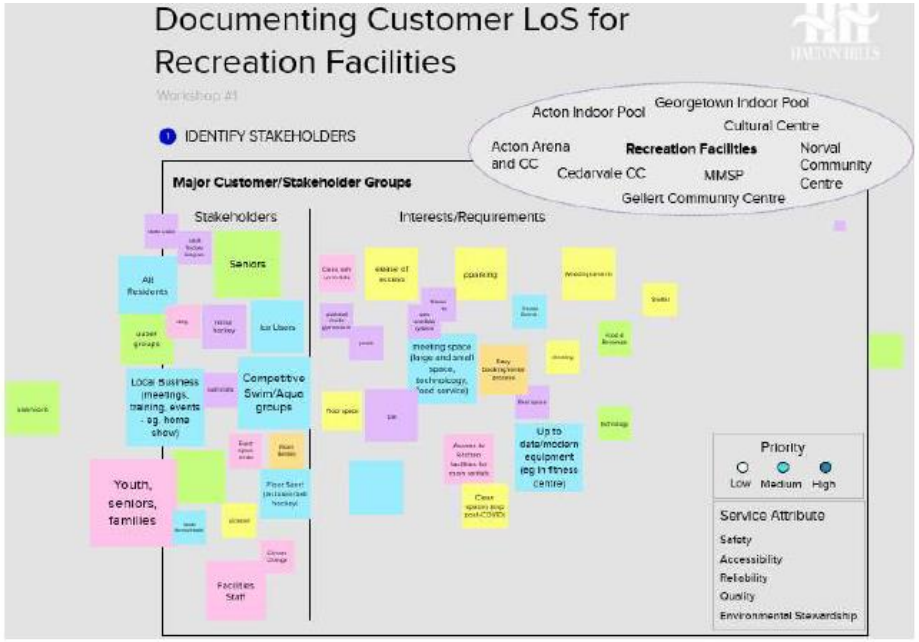
Workshop 1


Workshop #1
1
Document Current Levels of Service
2
Document Levels of Service Commitments/Targets
3
Determine Gap Between Current and Committed Levels of Service
4
Assess Climate Change Considerations on Levels of Service
5
Identify Strategies to Address Gaps and Risks from Climate Change
6
Determine Preferred Strategies to Mitigate or Adapt to Climate Change
Workshop #3
Workshop #2

Levels of Service (LoS) Refresh



Documenting Customer LoS for Recreation Facilities



1. Review of Corporate/Recreation/Facility Goals
2. Recreation & Parks Strategic Action Plan
3. Identify all stakeholder groups

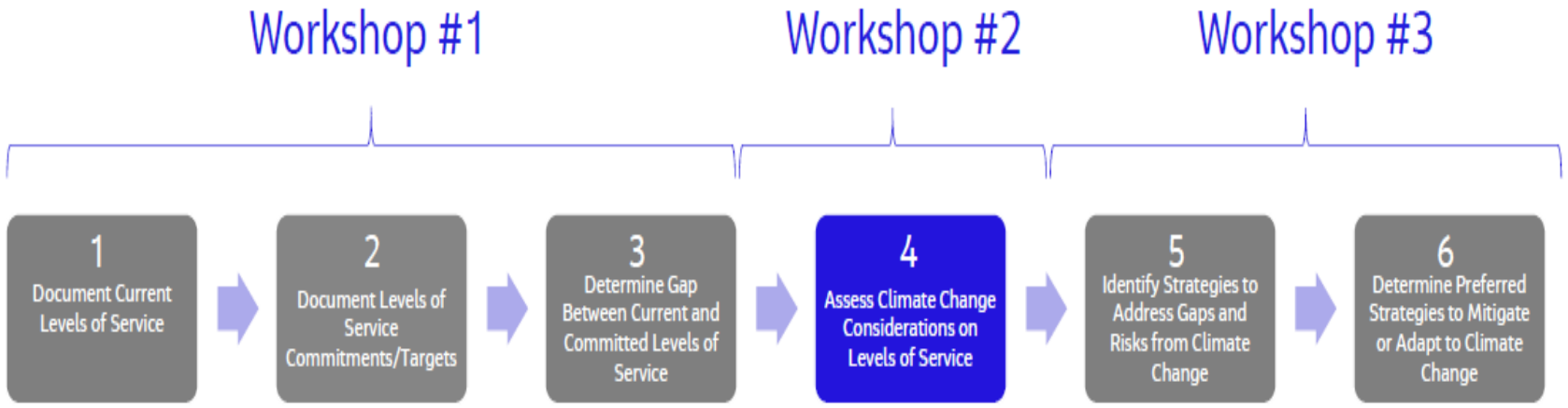
Customer Levels of Service

Key Service Attribute	Customer LoS Statement	Current LoS	Performance Measure	Data Owner	Customer LoS Commitment/Target	Current Gap	Future Gap	Factors Affecting LoS
Safety	Recreation facility visitors are safe (and aware of safety procedures) when participating in programs	Recreation facility visitors are safe (and aware of safety procedures) when participating in programs	Annual # of incidents (customer injuries, fire, etc.) Annual # of incident claims Ratio (incidents based on # of customers)	Facility supervisors - incidents; insurance rep - claims	Informal commitment to safety of recreation facility visitors	N	N	Climate change is making it harder to maintain facilities (eg. increased freezing rain rather than snow events)
	All legislated and regulatory requirements for recreation facilities are met	All legislated and regulatory requirements for recreation facilities are met	Approved certificates for each facility (or % of facilities that meet all requirements) Annual testing for fire (technical)		Formal commitment to comply. Meet Reg. 555 for swimming pool operation; Operating Enginers Act Reg. 219 for arenas	N	N	
	Recreation facility amenities are cleaned and disinfected regularly with green friendly products	Recreation facility amenities are cleaned and disinfected regularly with green friendly products	Customer feedback (citizen enquiries)	Facility supervisors	Formal commitment in Green Clean Policy	N	N	
	Recreation facility walkways and parking lots are clear during winter	Clear to industry standards once 5cm of snow	Customer feedback (citizen enquiries) # of Incidents / insurance claims	Facility supervisors	Formal commitment in the contract with contractors (See snow contractor RFP)	N	Y	Climate change will impact. Salt logs will show additional work in between contractors. Cost will be a factor in whether we can do any more. Expectations from customers re: environmental protection have changed a lot in last 10 years.

Improvements:

- Improved Customer LoS Metrics
- Assessment of Current Performance
- Documented Customer LoS Commitments/Targets
- Assessment of Current & Future Gaps
- Factors affecting LoS

Workshop 2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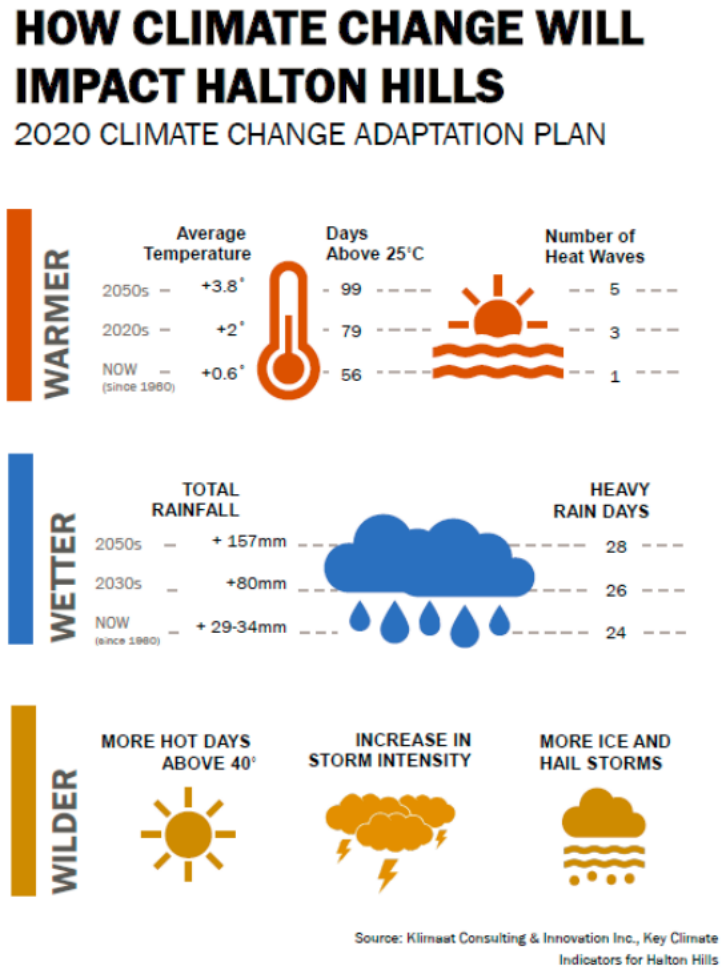
Climate Change



Facility	Relative Scores	# of Risks		
		High	Medium	Low
Town Hall	595	4	14	11
HH Cultural Centre	575	4	16	11
Acton Library	556	4	15	10
Acton Arena	484	3	13	13
MMSP	477	3	13	12
District 3 FH	464	0	17	14
District 1 FH	429	0	15	14
R.C.A. Ops Centre	419	0	15	15
Gellert CC	407	0	14	15
District 2 FH	389	0	16	14

- Climate Change Adaptation Plan
- Facilities Vulnerability Assessment

Exposure → Sensitivity → Adaptive Capacity

Customer LoS Statement	Exposure (y/n)		
	Warmer	Wetter	Wilder
Safety			
Recreation facility visitors are safe (and aware of safety procedures) when participating in programs	Yes	Yes	Yes

Customer LoS Statement	Sensitivity		
	Warmer	Wetter	Wilder
Safety			
Recreation facility visitors are safe (and aware of safety procedures) when participating in programs	Arena facilities not air conditioned so it's a safety risk for participants. Outdoor functions (skate park, outdoor performance space, splash pads) impacted by high temperature.	Safety concerns will increase due to more difficult recreation facility maintenance (eg. increased freezing rain rather than snow events). Outdoor functions (skate park, outdoor performance space) impacted by an increased number of rain days.	Outdoor functions (skate park, outdoor performance space) impacted by an increase in storms. Cedarvale is located within the floodplain, which could prevent ability to deliver services if affected by increased rain events particularly with higher intensity storms.

Customer LoS Statement	Adaptive Capacity		
	Warmer	Wetter	Wilder
Safety			
Recreation facility visitors are safe (and aware of safety procedures) when participating in programs	AC installation in existing facilities ($$$) Covered outdoor facilities (eg. tennis courts) Maximize use of trees to shade outdoor spaces and buildings (eg. surround outdoor amenities and place for optimum shading of buildings)	Increase in frequency of maintenance Transfering reclaimed heat from machines in order to heat sidewalks (particularly for redesign of facilities)	Evaluate potential flooding impact to Cedarvale (current and future)

Exposure → Sensitivity → Adaptive Capacity

Customer LoS Statement	Exposure (y/n)		
	Warmer	Wetter	Wilder
Safety			
Recreation facility walkways and parking lots are clear during winter		Yes	Yes

Customer LoS Statement	Sensitivity		
	Warmer	Wetter	Wilder
Safety			
Recreation facility walkways and parking lots are clear during winter		Salt logs show additional maintenance work in between contractors to keep walkways and parking lots clear during winter. Cost will be a factor in whether we can do any more.	

Customer LoS Statement	Adaptive Capacity			Vulnerabilities (current / future)
	Warmer	Wetter	Wilder	
Safety				
Recreation facility walkways and parking lots are clear during winter		Increase in frequency of maintenance/adjust program (extend clearance program) Transfering reclaimed heat from machines in order to heat sidewalks (particularly for redesign of facilities) Covered walkways (perhaps solar panels act as covering) Explore permeable pavement for sidewalks (possibly parking - depends on maintenance ability)		Currently vulnerable, but will increase in future. Already seeing ice buildups within half an hour and it will get worse. Used to be snow but now ice. Very important from a front-line perspective for staff and for customers; corporate liability associated with this.

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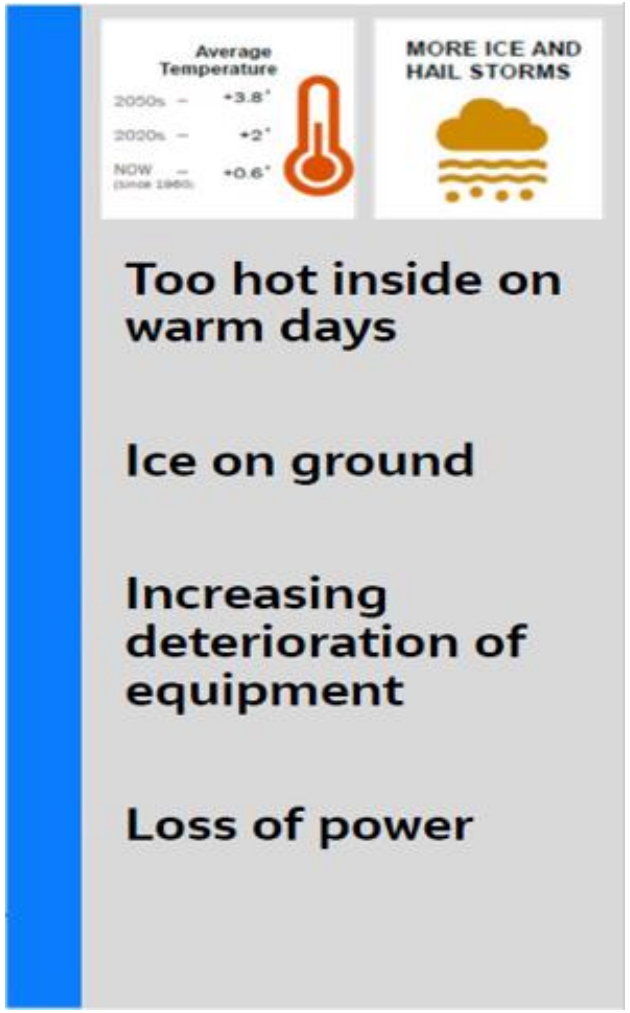
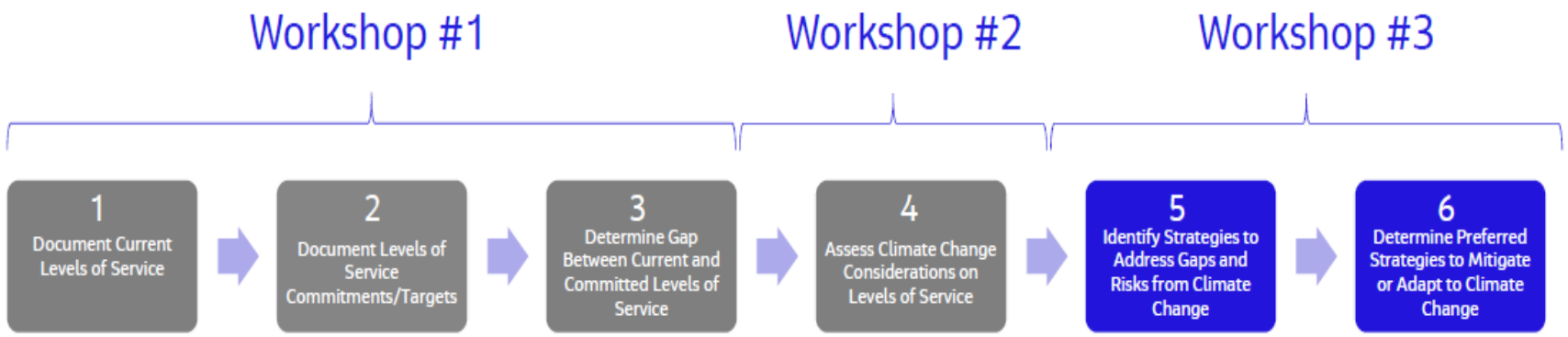
Key Themes



These themes represent the top vulnerabilities facing the Town's Recreation Facilities.

Workshop 3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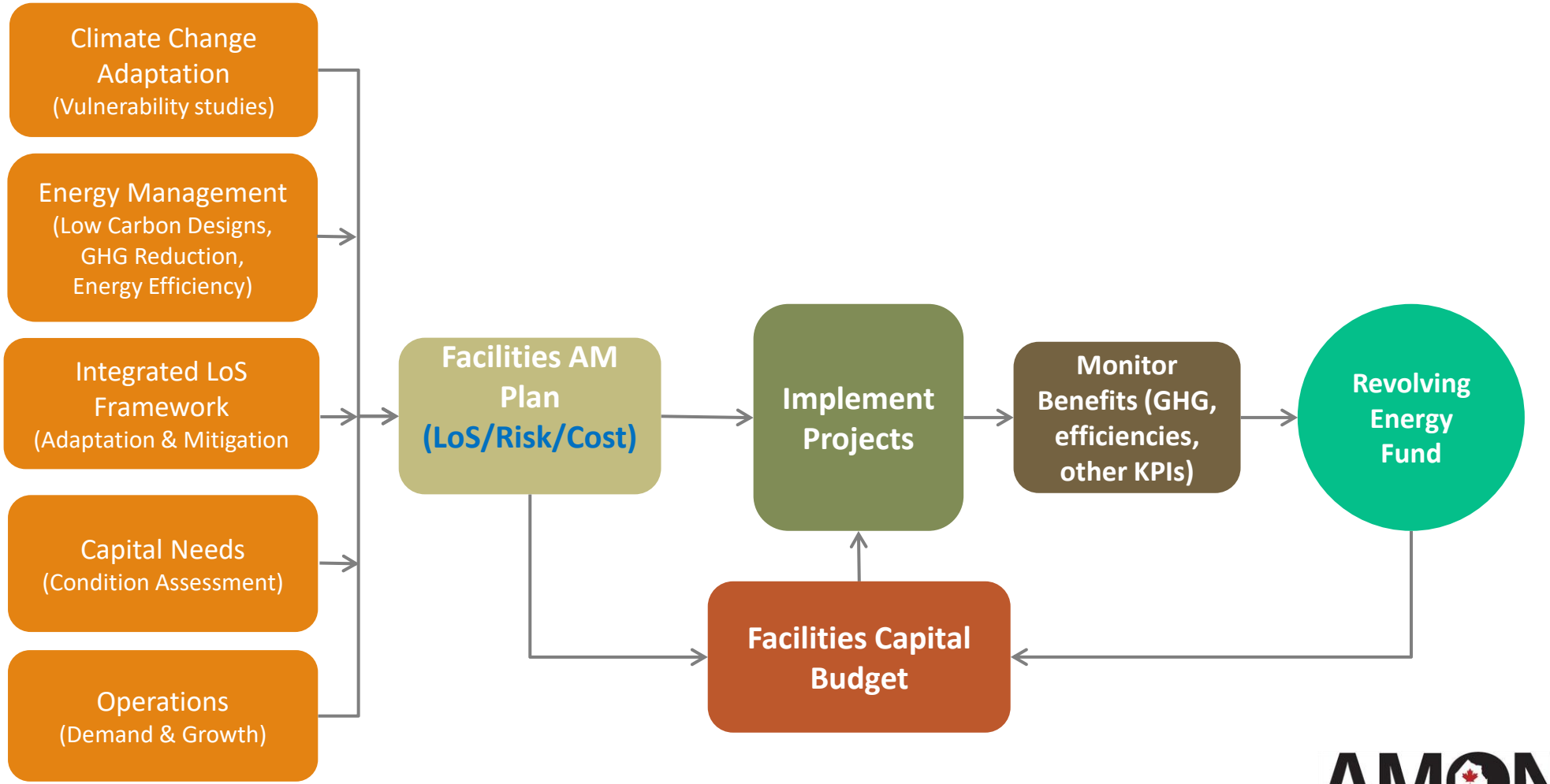
Addressing Vulnerabilities

Top 3-5 Vulnerabilities	Option(s) to Address Vulnerabilities						Preferred Option(s)	Implementation Strategy		
	A	B	C	D	E	F		Approach	Timeline	Cost (low, med, high)
Slips/falls from iced walkways and parking lots affect staff as well as customers; this is a corporate liability	Increased frequency of maintenance outdoors	Covered walkways (perhaps solar panels act as covering)	Transfering reclaimed heat from machines in order to heat sidewalks (particularly for redesign of facilities). Note: for new construction only (eg. Arenas)	Exploring permeable pavement for sidewalks (possibly parking - depends on maintenance ability)	Additional lighting for parking lots and walkways; possible sensors for efficiency	-	Short Term/Immediate: increased maintenance; evaluate lighting sufficiency (and at change out to new technology) Mid-Term: Covered walkways in particular areas (combined with solar panels to get to net 0)	Maintenance: All facilities; consider products and equipment Capital: look at geographically (micro-climates); opportunistic implementation (community groups, grants, combining with rehab and net 0); pedestrian traffic to facilities; other needs like claims	Maintenance - now Capital - 5-10 years	Determine needs by location Maintenance = low cost Capital = high cost **Offset by savings from liability payouts
Power outages cause interruptions of service and affecting quality of service (eg. unable to adequately cool or heat recreation facilities) - not to run rec services regularly; more administrative; emergency heating and cooling	Back-up power (generators) for life services specifically - geographical consideration (both existing are in Georgetown)	Underground power delivery	District energy system (eg. Acton high winds so Town Hall isn't affected)	Maintaining electrical system(s) to prevent outages (surges, etc.)	-	-	In place already: Maintaining electrical system(s) to prevent outages (surges, etc.) Mid-long term: geographically appropriate back-up generator and focused on life systems (not full service) Long Term: Broader Implementation than Recreation - District Energy - part of Vision Georgetown; Consider options in Acton long term in partnership	Capital: Back-up generators (operations); strategy for renovations and new construction (eg. rough in for future) Alignment across Town for District Energy (net 0); important design consideration for future recreation facilities	Back-up generators: 5-10 years District Energy: 10-20 years	Back-up generators: $300,000 ea (approx.) District energy: high

Roadmap

Action	Owner	Timeline
Establish an approach to tracking identified performance metrics annually	Asset Management team	TBD
Utilize the implementation strategy for vulnerability 1: Slips/falls from iced walkways and parking lots (worksheet 5) to undertake short term actions, including: a) Increasing maintenance, b) Evaluating lighting sufficiency (and at change out to new technology), and c) Laying the groundwork for mid-term action of installing strategically placed covered walkways (combined with solar panels).	Facilities team (Capital: Stephen and Dharmen)	Immediately
Utilize the implementation strategy for vulnerability 2: Power outages to continue with electrical maintenance programs already in place, in addition to undertaking mid-long term actions, including: a) Determining geographically appropriate locations for additional back-up generators focused on life systems (not full service), and b) Evaluate opportunities such as District Energy as part of a broader approach/partnership (eg. consistent with Vision Georgetown, etc.).	Back-up generators: Stephen and Dharmen District energy: Dharmen	2025
Utilize the implementation strategy for vulnerability 3: Decreasing ability to provide a comfortable environment for staff to undertake short term actions, including: a) Assessing building retrofits and automation control, b) Assessing town recreation facilities based on new green development standards, c) Laying the groundwork for the mid-term and long-term actions.	Assessments: Stephen Shelters: Maureen van Ravens EV Parking/Solar Panels: Dharmen Air conditioning: Stephen Shade trees: recreation and parks (Jennifer - lead) Green/solar roofs: Dharmen	TBD
Utilize the implementation strategy for vulnerability 4: Increased wear and tear on facilities to undertake short term actions, including: a) Planning/assessment of reclaimed water - for use with irrigation - to determine appropriate approach and maintenance implications, b) Assessing the capacity of recreation facility roof drainage compared to anticipated precipitation (eg. youth centre), combining this with regularly scheduled condition assessments c) Assessing risks with the recreation facility electrical systems (including follow-up to understand what risks are and the implications from climate change), and d) Re-evaluating lifecycle management strategies (plans underway).	Lifecycle managemnet strategies: Christine Reclaimed water: Dharmen Roof drainage assessment: facilities (Aaron) Electrical assessment: facilities (Aaron)	2021-2023

Facilities Integrated Framework



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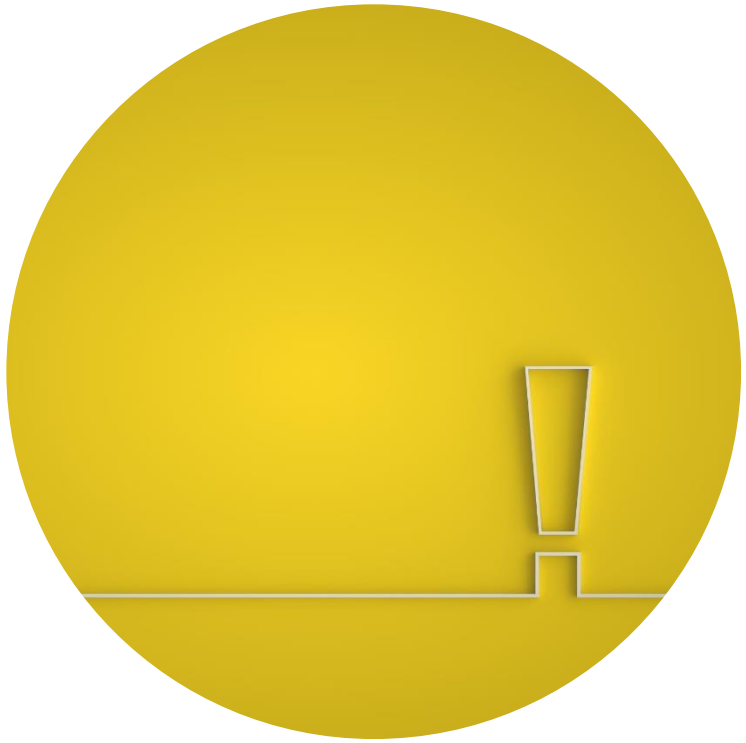
Thank You



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