Asset Retirement Obligations Assessment

PS 3280 – ARO Implementation

PREPARED FOR: Town of Cobalt

Date: August 26, 2024

****CONFIDENTIAL****

REVISION CONTROL

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DISCLAIMER

Limitations, Reliance, And Confidentiality

This report has been prepared for the limited purposes set forth in the Service Agreement. This report does not quantify the extent of all current and/or potential environmental impacts and/or legal obligations and is limited in scope to the reports provided. No report can wholly identify or eliminate the possibility of environmental impacts or risks. Conclusions derived are specific to the immediate scope of the review study, and the limitations imposed by available information, and cannot be extrapolated or expanded beyond the scope herein. This report has been prepared for the exclusive use of the Client subject to the terms, conditions and limitations contained within the statement of work or terms of service for this report. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third party. 360 accepts no responsibility for damages, losses or other impacts suffered by any third party as a result of decisions made or actions conducted in reliance on this report, unless 360 has provided its prior written consent. Written authorization from 360 will be required for additional parties to rely on this report. 360 makes no representations or warranties other than as expressly given in writing, and no other representations or warranties are implied or expressed.

EXECUTIVE SUMMARY

The Town of Cobalt ("Cobalt") engaged 360 Engineering & Environmental Consulting Ltd. ("360") to complete the identification, recognition, and estimate of asset retirement obligations ("ARO") associated with its tangible capital assets ("the assets").

The assessment is to serve as the first step in the implementation of the Public Sector Accounting Board's financial reporting standard *PS 3280 – Asset Retirement Obligations.* PS 3280 establishes standards on how public sector entities are required to report a liability for asset retirement obligations. These obligations often arise due to legal and contractual requirements to perform specified retirement activities in relation to the assets end of useful life. The standard requires an entity to recognize a liability for an ARO when the obligation is incurred, and it can be reasonably estimated [1].

An ARO encompasses all costs directly attributable to asset retirement activities and is limited by the extent of the legal obligation establishing the liability. This may include costs required for abandonment, decommissioning, demolition, remediation, reclamation, post-monitoring, disposal, and project management.

Demolition activities include purging vessels and pipelines, dismantling equipment, and removing structures. Remediation is the delineation and removal of contaminated substances from soils and groundwater. Reclamation is the restoration of the surface location to its original land use or an equivalent function.

360 implemented a five-part methodology in this assessment:

1) Identification of Assets
2) Data Collection
3) Recognition Criteria
4) Closure Activities
5) ARO Estimate

Values utilized in this estimate are reported in undiscounted 2023 CAD. A summary document detailing the asset retirement obligations associated with the assets was provided electronically: *PS 3280 ARO Town of Cobalt Appendices*.

The effective date of the information is July 10, 2024. Key quantities utilized in the formation and calculation of the assessment and the values contained herein were provided by the Town of Cobalt based on Cobalt's asset list, facility assessment reports, aerial reviews, and GIS measurement.

Details surrounding the measurement of the assets is noted within the Basis of Estimate.

ASSET RETIREMENT OBLIGATIONS

Town of Cobalt's asset retirement obligations are represented in Table 1:

Table 1: Asset Retirement Obligations

Asset	Demolition	Remediation	Reclamation	Safety	Project Management	Subtotal
Cobalt Golden Age Club	$76,736	$0	$0	$3,274	$7,674	$87,683
Cobalt Historical Society	$23,232	$0	$0	$991	$2,323	$26,547
Paul Penna Library	$102,009	$0	$0	$4,352	$10,201	$116,561
Firefighters Museum	$38,719	$0	$0	$0	$0	$38,719
Sewer Segment-120	$2,511	$0	$0	$107	$251	$2,869
Sewer Segment-15	$2,511	$0	$0	$107	$251	$2,869
Sewer Segment-155	$42,750	$0	$0	$1,824	$4,275	$48,849
Sewer Segment-185	$15,981	$0	$0	$682	$1,598	$18,261
Sewer Segment-186	$41,750	$0	$0	$1,781	$4,175	$47,706
Sewer Segment-47	$134,938	$0	$0	$5,757	$13,494	$154,189
Sewer Segment-68	$54,116	$0	$0	$2,309	$5,412	$61,837
Fuel Tank-61	$30,916	$0	$0	$1,319	$3,092	$35,326
Fuel Tank-62	$28,434	$0	$0	$1,213	$2,843	$32,491
Total	**$594,602**	**$0**	**$0**	**$23,715**	**$55,588**	**$673,906**

RECOGNIZED ASSETS

The assets that meet the recognition criteria for an ARO are represented in Table 2:

Table 2: Asset Compilation

Asset	Justification	Obligating Legislation, Source or Contract
Cobalt Golden Age Club, Cobalt Historical Society, Paul Penna Library, Firefighters Museum	There is an in-scope legal obligation for the removal of hazardous building materials (HBMs) where they may be disturbed during renovation, maintenance, or demolition. ARO will be calculated for the removal of the HBM-containing portions of the buildings according to the method that the retirement obligation is most likely to be fulfilled.	Occupational Health and Safety Act, R.S.O 1990, (c. O-1, as amended). Section(s) 37.1-37.3, 39.1. [2] Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, O. Reg. 278/05. Section(s) 3.4, 6.1-6.2, 10.1-10.3, 10.10-10.11. [3]
Sewer Segment-120, Sewer Segment-15, Sewer Segment-155, Sewer Segment-185, Sewer Segment-186, Sewer Segment-47, Sewer Segment-68	There is an in-scope legal obligation for the removal of asbestos containing material where it may be disturbed during renovation, maintenance, or demolition. ARO will be calculated for the removal of the asbestos-containing portions of the network where	Environmental Protection Act, R.S.O. (1990, c. E. 19, as amended). Environmental Compliance Approval for a Municipal Sewage Collection System (ECA No. 206-W601, Issue No. 1 effected Aug 2, 2023). Ontario Ministry of the Environment. [4]

	routine replacement is expected to occur.	Occupational Health and Safety Act, R.S.O 1990, (c. O-1, as amended). Section(s) 37.1-37.3, 39.1. [2] Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, O. Reg. 278/05. Section(s) 3.4, 6.1-6.2, 10.1-10.3, 10.10-10.11. [3]
Fuel Tank-61, Fuel Tank-62	There is an in-scope legal obligation to dispose of the fuel storage tank in a prescribed manner upon retirement. ARO will be calculated to reflect compliance with the applicable regulation.	Fire Code, O. Reg. 231/07 [made under the Fire Protection and Prevention Act, S.O. 1997, c. 4]. King's Printer for Ontario. Section(s) 4.3.17.2-4.3.17.5. [5]

DATA

Data was sourced from proprietary data provided by Town of Cobalt, public records, satellite imagery, and 360's proprietary database. In general:

- Cobalt's proprietary data was comprised of:
  - Asset lists [6] [7] [8] [9] [10] [11] [12] [13] [14] [15] [16] [17] [18] [19] [20] [21] [22] [23] [24] [25] [26]
  - Appraisals and historical records [27] [28] [29] [30] [31] [32] [33] [34] [35]
  - Environmental assessments and sampling [4] [36]
  - Contracts and agreements [37]
- Public records encompassed:
  - Historical environmental approvals, order, and enforcements [38] [39] [40] [41] [42] [43] [44] [45]
  - Various policy and regulatory documents [46] [47] [48] [49] [50] [51] [52] [53] [54] [55] [56] [57] [2] [58] [59] [60] [61] [62] [63]
  - Hazardous materials manuals [64] [65] [3] [66] [67] [68] [69] [70]
- Satellite imagery was used to characterize landscape features, construction history, and facility components [71].
- 360's proprietary database included:
  - Service unit rates [72] [73]
  - 2,641 analogous Environmental Site Assessment ("ESA") and remediation reports
  - Technical data and closure records collected while evaluating $20 billion of ARO and conducting 5,500 closure activities in the Western Canadian Sedimentary Basin.

REFERENCE OF ESTIMATES

The costs applied are exhibited in the Appendices.

SCOPE OF ESTIMATE

Costs were developed from 360's proprietary data and professional experience. In general:

- The asset's demolition and disposal estimates were calculated according to assumed construction quantities and the quantum of service associated with the demolition and disposal of each quantity.
- Remediation was out of scope of this assessment as there was no documentation allowing the presence of contamination to be confirmed. If it is considered likely that future environmental assessments will confirm the presence of contamination, a different section may apply (see PS 3300).
- Reclamation was calculated according to construction type, land use, and disturbance area and the quantum of service associated with the activity.

BASIS OF ESTIMATE

Execution Methodology

The assets or their components, where identified, are to be demolished on site and removed based on best practices, occupational health and safety requirements, and provincial and federal regulations as applicable.

Contents

The ARO estimate assumes all contents (i.e. equipment, accessories, etc.) have been removed prior to demolition and deconstruction. No salvage or resale values were netted against the ARO.

Vendor Experience and Rationale

The basis of estimate and costing methodology was derived from historical data sets completed and compiled by 360 and professional experience including but not limited to:

- $25B of asset retirement obligations assessed.
- Benchmarking data from 400+ Site-Specific Liability Assessments [74].
- Proprietary database of 10,000+ historical environmental reports.
- Team of 100+ engineering and environmental professionals across British Columbia, Saskatchewan, and Alberta.
- 100% approval of ARO values utilized for financial reporting as audited by multinational accounting firms.

Rates

Unit rates were sourced from 360 internal execution rates for closure activities. The rates utilized in the ARO estimate are represented in *Appendix B – Rate Sheet* provided electronically.

Equipment Rates

Equipment rates utilized in the ARO estimate are inclusive of operator costs.

Insurance

Transportation insurance costs are excluded from the ARO estimate.

Hazardous Building Materials

360 reviewed all buildings under ownership or management of the Town with construction or in-service dates before 1991 to determine the likelihood of the presence of hazardous building materials (HBMs) that would allow Cobalt to recognize a liability based on legislation and standards related to the safe abatement and disposal of hazardous materials. Buildings with construction dates after 1990 are considered less likely to contain HBMs as per Government of Ontario guidance [68]. 360 completed a desktop exercise utilizing Town provided data, publicly available data, and photos of visible construction materials to facilitate the assessment of potential retirement obligations that Cobalt should recognize based on the likelihood of hazardous building materials present in the remainder of the buildings.

360 reviewed aerial photos and management documentation as available for all buildings to determine if the asset had analogous characteristics to building practices and materials known to contain hazardous substances, as defined in asbestos management guidance documents [68] [70] [69]. The identification of these practices and characteristics including vintage, building type, building use, and building materials were benchmarked against the guidance documents by comparing the manufacturing period of known HBMs to the construction, renovation, or in-service date of the building to consider the potential inclusion of the asset per PS 3280 requirements.

360 recognized construction materials that may contain asbestos and estimated the cost to abate, remove, and dispose of the potential HBMs using its proprietary cost models factoring in individual building characteristics such as surface area, building height, age, and the nature of the material being disposed. In summary, only assets of the appropriate vintage with visible construction materials thought to be potentially HBM-containing were included, as outlined in the Ontario guidance documents.

DISCLAIMER: 360 provides these cost estimates based on publicly available data and Government of Ontario technical bulletins and best practices. These estimates are to be used as a benchmark for the purpose of recording a liability related to an asset retirement obligation. A desktop review cannot confirm the presence of hazardous building materials and should not be relied upon for the purposes of planning, development, renovation, construction, or any other such act that may require disturbance of materials within the assets noted in the assessment. The Town is recommended to follow best practices per Ontario Occupational Health & Safety Legislation such as completing hazard assessments, intrusive sampling and testing to confirm the presence of hazardous building materials prior to any development, renovation, construction, or disturbance within the buildings noted in this assessment.

Key Assumptions

The accuracy and reliability of the ARO estimate depends on the validity of the following key assumptions. These assumptions should be continuously monitored, and any significant deviations should be promptly addressed through proper change management procedures.

Disposal Estimate Project Management

Project management fees were applied with a 10% multiplier to the base costs. The project management costs represent third party contractor costs associated with the demolition and reclamation of the assets.

Safety

360 utilized a 4.27% safety multiplier applied to all demolition and reclamation activities. The safety multiplier was derived from statistics for safety spend within industry and extrapolated for the province of Ontario. The multiplier includes 1.3% for Workers Compensation Board premiums [75], 2.50% spend for on site safety training [76], and 0.47% for normal use on site personal protective equipment (PPE) [77].

Material Disposal

Material quantities attributed to the building's area are to be removed, transported, and disposed of at the nearest disposal area.

Estimate Methodology

The values contained herein were completed as a 2023 estimate.

Technology

The assessment does not predict future technological advances and process improvements.

Post-1990 Facilities

This assessment assumes that the likelihood of the presence of hazardous building materials in buildings constructed after 1990 to be nil.

GENERAL ASSESSMENT METHODOLOGY

360 implemented a five-part methodology in this assessment:

1) Identification of Assets
2) Data Collection
3) Recognition Criteria
4) Closure Activities
5) ARO Estimate

IDENTIFICATION OF ASSETS

360 used Cobalt's list of tangible assets ("TCA Register"), public and historical environmental data to identify unique assets for the identification of potential asset retirement obligations.

The identification process considered:

- Assets in productive use and being amortized,
- Tangible capital assets fully amortized,
- Assets no longer in productive use,
- Unrecognized tangible capital assets,
- Unrecorded tangible capital assets identified in public records [38] [39] [40] [41] [42] [43] [44] [45],
- Unrecorded tangible capital assets identified in any provincial dispositions.

The assets were classified in accordance with official recommendations [78] and categorized based on asset description, age, book value, and event count. To ensure that the fullest representation of the Town's assets was captured, all available and relevant information was compiled. This included, but was not limited to:

- Permanent structures and their disturbance area,
- Land and land improvements,
- Surface infrastructure (i.e., storage vessels, shacks, etc.),
- Ancillary surface fixtures and their disturbance area (i.e., concrete pads, parking lots, etc.),
- Portable, temporary, and/or non-fixed assets (machinery, vehicles, bus shelters, etc.),
- Engineered structures,
- Residual contamination from operation or other contamination events.

Certain records in the TCA Register were consolidated to represent a unique underlying asset where appropriate. The corresponding event count refers to individual TCA Register records, overlapping assets, or adjusting entries. The asset data is represented in Table 3.

Table 3: Asset Records

Major Asset Class	Unique TCA IDs (360)	Event Count
Buildings	15	15
Engineered Structures	2,110	2,121
Land	0	0
Land Improvements	0	0
Machinery & Equipment	23	15
Vehicles	11	0
Total	**2,159**	**2,151**

DATA COLLECTION

360 requested to access, review, and collect multiple data sets to verify that no assets were overlooked in the identification process and to identify where legal obligations for retirement may exist. The purpose of requesting and gathering data is to ensure that all relevant information to the recognition or calculation of a potential ARO is thoroughly investigated.

360 requested the following information from the Town of Cobalt:

- A complete register of all tangible capital assets currently owned or controlled.
- Electronic plot plans, site plans, and construction plans for major buildings and infrastructure.
- Details of any third-party assets located on Town-owned land and any assets for which the Town maintains an interest but is not the primary owner or leaseholder, including contracts and agreements for the third-party use of Town-owned assets.
- Reports and results of any environmental assessments, testing, and sampling that was completed in relation to the assets.
- Details of any known contamination, structural damage, hazardous building materials, or hazardous chemicals stored or handled in relation to the assets.
- Details of any machinery and equipment requiring disposal under environmental legislation, or equipment that may generate contamination through its normal use.
- Details of any assets that the Town planned to permanently remove from service or prepare for alternative use.
- Details of any assets that may cross, are in proximity to or adjacent to a water body or sensitive natural area.
- Details of any landfills active or inactive and the nature of their ownership by the Town.
- Details of any cultural, historical, or heritage sites that the Town had an interest in preserving indefinitely.
- Details of any legal or environmental enforcements, orders, or judgements made in relation to the assets.

360 assumed that all data collected was complete and accurate to the best knowledge of the Town. 360 cannot confirm the accuracy and validity of the data collected from private or proprietary sources.

The requests assisted in identifying information, documents, approvals, orders, or testing results that could be used to validate the potential inclusion or exclusion of an asset based on PS 3280 ARO recognition criteria.

Additional information was collected and included the following:

- Interviews with key Town of Cobalt employees responsible for management and oversight of the assets [79].
- Review of satellite imagery to identify ancillary assets, construction practices, and land use [71].
- Review of key travel distances and environmental considerations.
- Review of legislation regulating environmental protection and enhancement activities.

360 reviewed public records published by the Ontario Government to determine any historical environmental enforcements or prosecutions, approvals, permits, or authorizations, applicable regulations, environmental site assessments, development history, and designated historical or cultural sites to supplement the data requests provided by the Town [38] [39] [40] [41] [42] [43] [44] [45].

The data collected was cross referenced against the identified asset lists to determine if the assets met the PS 3280 recognition criteria.

RECOGNITION CRITERIA

PS 3280 specifies four criteria that must be met for an asset retirement obligation to exist, including the presence of a legal obligation, the occurrence of a past transaction or event, an expectation of future economic benefits being given up, and the ability to make a reasonable estimate of the amount. These liabilities arise from legal obligations associated with the retirement of tangible capital assets, stemming from acquisition, construction, development, or use [80].

Criterion 1: A Legal Obligation Exists

The first step in the application of PS 3280 recognition criteria was to determine if a legal obligation exists. A legal obligation:

- Stems from the entity's acquisition, construction, development, or normal use of a TCA.
- In some form requires the retirement of an asset through contracts, legislative requirements, or reasonable expectations under the doctrine of promissory estoppel.

In determining whether a legal obligation exists, all known client provided data and public data was reviewed.

Where a legal obligation did not exist, the asset fell outside of the scope of the Standard and an ARO was not recognized. The assets excluded per criterion 1 are represented in Table 4:

Table 4: Criterion 1 – Excluded Assets

Major Asset Class	Minor Asset Class	Justification	Source
Buildings	Permanent Structure (11/15)	Out of scope: A legal obligation does not exist. Include if the Town can provide any agreements, contracts, development plans, or engineering studies that may suggest any of these assets: are known to contain hazardous materials; must be removed, decommissioned, or demolished for any legal reason; must be monitored post retirement; are being prepared for permanent removal or alternate use that could impose an existing legal obligation; are being prepared for removal and are across or adjacent to a water body or sensitive natural area.	None
Machinery & Equipment	Bins, Heavy Construction Equipment, Tools & Shop Equipment, Turf Equipment	Out of scope: A legal obligation does not exist.	None
Vehicles	All Minor Classes	Out of scope: A legal obligation does not exist.	None

Where a legal obligation did exist in relation to an asset or its component costs, the recognition process moved on to the next criterion.

Criterion 2: Obligating Event has Occurred

An asset retirement obligation can be incurred through a past transaction or event that puts the identified asset in control of the entity such as:

- The acquisition, construction, or development of a tangible capital asset; or
- Normal use of a tangible capital asset.

The existence of a legally enforceable obligation is not the event that creates the liability [81]. The obligating event had occurred for all assets satisfying the prior criterion. No assets were excluded at this step and the recognition process moved on to the next criterion.

Criterion 3: Future Economic Benefits Given Up

The requirement that future economic benefits will be given up performing the retirement activities must be satisfied to recognize an ARO per PS 3280. The requirement is defined under the basis that depreciable assets have a finite life and, at some point in the future, will deteriorate to the point where they cannot be routinely maintained and must be replaced. Obligations that result from the normal use of a tangible capital asset are predictable, likely to occur and unavoidable as a result of operations [82].

Where it was deemed unlikely that an asset would be permanently removed from service in a manner satisfying an existing legal obligation, future economic benefit would not be forgone, and the asset fell outside of the scope of the Standard. The assets excluded per criterion 3 are represented in Table 5:

Table 5: Criterion 3 – Excluded Assets

Major Asset Class	Minor Asset Class	Justification	Source
Engineered Structures	Roadway System, Storm System	Out of scope: Future economic benefits are not expected to be given up. Given the nature of the assets, the Town expects that it will never incur costs to permanently remove any portion of the system, nor has the Town provided any agreements, contracts, development plans, or engineering studies suggesting that any portion of the system is to be permanently removed.	None
Engineered Structures	Sewer System: Collection System (191/214), Manhole, Plant/Facility Pumping Equipment	Out of scope: Future economic benefits are not expected to be given up. Given the nature of the assets, the Town expects that it will never incur costs to permanently remove any portion of the system, nor has the Town provided any agreements, contracts, development plans, or engineering studies suggesting that any portion of the system is to be permanently removed.	Environmental Protection Act, R.S.O. (1990, c. E. 19, as amended). Environmental Compliance Approval for a Municipal Sewage Collection System (ECA No. 206-W601, Issue No. 1 effected Aug 2, 2023). Ontario Ministry of the Environment. [4] Environmental Protection Act, R.S.O. (1990, c. E. 19, as amended). Director's Order (No. 1-ROGQN issued Jan 26, 2022). Ontario Ministry of the Environment. [36] Town of Cobalt. (2022). "Services agreement between Ontario Clean Water Agency and the Corporation of the Town of Cobalt". Section(s) 3.1. [37]
Engineered Structures	Sewer System: Collection System (16/214)	Out of scope: Future economic benefits are not expected to be given up. There is an in-scope legal obligation for the removal of asbestos in a prescribed manner where it may be disturbed during routine maintenance or permanent removal. If the Town has	Environmental Protection Act, R.S.O. (1990, c. E. 19, as amended). Environmental Compliance Approval for a Municipal Sewage Collection System (ECA No. 206-W601, Issue No. 1 effected Aug 2, 2023). Ontario Ministry of the Environment. [4]

		plans to replace the asbestos-containing pipe, then ARO will be calculated for asbestos abatement considerations. However, the Town expects that it will never incur costs to permanently remove any portion of the system, nor has the Town provided any agreements, contracts, development plans, or engineering studies suggesting that any portion of the system is to be replaced or permanently removed. If these plans change, ARO will be calculated assuming recognition criteria are satisfied.	Occupational Health and Safety Act, R.S.O 1990, (c. O-1, as amended). Section(s) 37.1-37.3, 39.1. [2] Designated Substance – Asbestos on Construction Projects and in Buildings and Repair Operations, O. Reg. 278/05. Section(s) 3.4, 6.1-6.2, 10.1-10.3, 10.10-10.11. [3]
Engineered Structures	Water System	Out of scope: Future economic benefits are not expected to be given up. Given the nature of the assets, the Town expects that it will never incur costs to permanently remove any portion of the system, nor has the Town provided any agreements, contracts, development plans, or engineering studies suggesting that any portion of the system is to be permanently removed.	Ontario Water Resources Act, R.S.O. (1990, c. O. 40, as amended). Permit to Take Water (Permit No. 6462-BB9RFA expiring May 2, 2029). Ontario Ministry of the Environment, Conservation and Parks. [83] Safe Drinking Water Act, S.O. (2002, c. 32). Municipal Drinking Water Licence (Licence No. 206-101, Issue No. 6 dated Sept 14, 2022). Ontario Ministry of the Environment. [29] Town of Cobalt. (2022). "Services agreement between Ontario Clean Water Agency and the Corporation of the Town of Cobalt". Section(s) 3.1. [37]

Where an asset satisfied the requirement, the recognition process moved on to the next criterion.

Criterion 4: A Reasonable Estimate can be Made

A reasonable estimate of the costs directly attributable to the retirement of the asset must be satisfied as the final recognition criterion in identifying an ARO. These estimates are built upon reliable proprietary data, local unit rates, and expert opinion.

A reasonable estimate of the asset retirement obligation could be made for all assets satisfying the prior criteria. No assets were excluded at this step.

Assets satisfying all criteria had a recognizable ARO requiring an estimate in accordance with the legal obligation establishing the liability.

Exclusions

Key exclusions based on the criteria review and expert opinion included the following assets and major classifications:

Network Distribution and Collection Systems

Exclusion on the basis that infrastructure and gathering systems associated with water and wastewater collection and distribution are assumed to be replaced and routinely maintained for the use and purposes of the Town. Any future suspension or abandonment of segments are assumed to be reclaimed in place in the effort to reduce further disturbance of ecological environments.

Inclusions

360 reviewed and completed the recognition criteria for each asset class and identified asset. The assets that met the PS 3280 recognition criteria are represented in Table 6:

Table 6: Recognition Summary

Asset	Requirement 1: Legal Obligation	Requirement 2: Obligating Event	Requirement 3: Future Benefit	Requirement 4: Reasonable Estimate	Recognized ARO
Cobalt Golden Age Club	Y	Y	Y	Y	Y
Cobalt Historical Society	Y	Y	Y	Y	Y
Paul Penna Library	Y	Y	Y	Y	Y
Firefighters Museum	Y	Y	Y	Y	Y
Fuel Tank-61	Y	Y	Y	Y	Y
Fuel Tank-62	Y	Y	Y	Y	Y
Sewer Segment-120	Y	Y	Y	Y	Y
Sewer Segment-15	Y	Y	Y	Y	Y
Sewer Segment-155	Y	Y	Y	Y	Y
Sewer Segment-185	Y	Y	Y	Y	Y
Sewer Segment-186	Y	Y	Y	Y	Y
Sewer Segment-47	Y	Y	Y	Y	Y
Sewer Segment-68	Y	Y	Y	Y	Y

Inclusion summaries referencing processes, relevant legislation, sources, and contractual obligations were provided electronically in *Appendix C - Scope Summary*.

CLOSURE ACTIVITIES

The assets that met the required PS 3280 criteria for the recognition of an ARO were assigned analogous service types to determine closure costs and risk associated with the requirements for closure activities.

Building Demolition & Disposal

The constructed assets were characterized by major components. Components were identified from plot plans and satellite imagery.

The major components were defined as:

Major Component	Description
Vessel	Small infrastructure that required a small picker truck to decommission.
Tank	An above ground tank used to store fluids. Tanks ranged between 100 bbl. to 3,000 bbl.
Infrastructure	Structures were counted based on aerial review

Remediation

Remediation was excluded from this assessment due to the lack of completed environmental site assessments, Phase 1, or Phase 2 remedial assessments required to determine the presence of contaminants from normal use of the tangible capital assets. The existence of any liability in such cases is contingent on a future determination by a court, a regulator or some other competent authority, or a future determination by the entity that it would be held liable, and therefore excluded from the scope of PS 3280.

Reclamation

Reclamation was excluded from this assessment as there were no identified legal obligations requiring reclamation in relation to the retirement of Town-owned assets.

ASSET RETIREMENT OBLIGATION ESTIMATES

ARO estimates were calculated for each closure activity based on construction material quantities and service unit rates specific to the Assets utilizing the basis of estimate referenced in this assessment.

Building Demolition

Building demolition costs were applied to each asset and based on service type and material quantities calculated by 360 for the purposes of the estimates.

The material quantities calculated for the assets are demonstrated in Table 7.

Table 7: Material Quantity List

Construction Material	Quantity
Finishing Material – Drywall/Flooring (ea)	409
Framing Material – Wood (ea)	831
Siding Material – Wood (ea)	104
Tank Abandonment (ea)	2
Asbestos Cement Pipe (m)	589

The service rates and units of time required for closure and the summation of, formulated the overall demolition costs of the buildings. 360 determined the per day cost for each service activity which are outlined below:

The costs for Hazardous Material Removal (Flooring) are described in Table 8.

Table 8: Hazardous Material Removal (Resilient Flooring/Vinyl Tile)

	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	2	$1,600
Dump Trailer (hour)	$170	1	$1,700
Scissor lift (hour)	$139	1	$1,389
Supervisor (day)	$1,000	1	$1,000
Tear Off Asbestos Material - no haul off	$3	130	$4,036
Containment Barrier/Airlock/Decon. Chamber	$0.67	173	$116
Containment Barrier - Tension post - per day	$4.23	43	$183
Negative Air Fan/Air Scrubber (Day)	$140	9	$1,213
Crew Truck (day)	$900	1	$900
Asbestos Material Disposal Container	$125	33	$4,066
Total			**$16,204**

The costs for Hazardous Material Removal (Interior Wall/Floor) are described in Table 9.

Table 9: Hazardous Material Removal (Interior Wall/Floor)

Service	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	2	$1,600
Dump Trailer (hour)	$170	1	$1,700
Scissor lift (hour)	$139	0.1	$139
Supervisor (day)	$1,000	1	$1,000
Tear Off Asbestos Material - no haul off	$3.8	150	$5,709
Containment Barrier/Airlock/Decon. Chamber	$0.67	200	$134
Containment Barrier - Tension post - per day	$4.23	50	$211
Negative Air Fan/Air Scrubber (Day)	$140	10	$1,400
Crew Truck (day)	$900	1	$900
Asbestos Material Disposal Container	$125	38	$4,692
Total			**$17,485**

The costs for Hazardous Material Removal (Interior Ceiling) are described in Table 10.

Table 10: Hazardous Material Removal (Interior Ceiling)

Service	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	2	$1,600
Dump Trailer (hour)	$170	1	$1,700
Scissor lift (hour)	$139	1	$1,389
Supervisor (day)	$1,000	1	$1,000
Tear Off Asbestos Material - no haul off	$6	40	$2,400
Containment Barrier/Airlock/Decon. Chamber	$0.67	53	$36
Containment Barrier - Tension post - per day	$4.23	13	$56
Negative Air Fan/Air Scrubber (Day)	$140	3	$373
Crew Truck (day)	$900	1	$900
Asbestos Material Disposal Container	$125	10	$1,251
Total			**$10,705**

The costs for Hazardous Material Removal (Demolition) are described in Table 11.

Table 11: Hazardous Material Removal (Demolition)

Service	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	2	$1,280
Dump Trailer (hour)	$170	1	$1,360
Scissor lift (hour)	$139	1	$1,111
Supervisor (day)	$1,000	1	$1,000
Tear Off Asbestos Material - no haul off	$3.81	89	$2,710
Containment Barrier/Airlock/Decon. Chamber	$0.67	118	$80
Containment Barrier - Tension post - per day	$4.23	22	$94
Negative Air Fan/Air Scrubber (Day)	$140	22	$3,122
Crew Truck (day)	$900	1	$900
Asbestos Material Disposal Container	$125	22	$2,784
Total			**$14,440**

The costs for Building Demolition/Removal are described in Table 12.

Table 12: Building Demolition/Removal

Service	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	3	$1,920
Excavator w/ attachment (hour)	$218	1	$1,744
Excavator (hour)	$195	1	$1,560
Dump Trailer (hour)	$170	1	$1,360
D6 Dozer	$200	1	$1,600
Supervisor (day)	$1,000	1	$1,000
Crew Truck (day)	$900	1	$900
Total			**$10,084**

The costs for Disposal Cost per Trip are described in Table 13.

Table 13: Disposal Cost per Trip

Service	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	2.09	$2,679
Dump Trailer (hour)	$170	2.09	$5,694
Crew Truck (day)	$113	2.09	$471
Landfill (Tonne)	$0	3.86	$0
Total			**$8,844**

The costs for Disposal Cost per Trip (HBM) are described in Table 14.

Table 14: Disposal Cost per Trip (HBM)

Service	Rates	Units	Service
Service	ON	-	ON
Labourer (hour)	$80	2.09	$1,675
Dump Trailer (hour)	$170	2.09	$3,559
Crew Truck (day)	$90	2.09	$188
Landfill (Tonne)	$0	3.86	$0
Total			**$5,422**

The costs for Concrete Removal are described in Table 15.

Table 15: Concrete Removal (m³)

Service	Rates	Units	Service
Service	ON	-	ON
Excavator w/ attachment (hour)	$218	1	$1,744
Excavator (hour)	$195	1	$1,560
Rock Truck (hour)	$250	1	$2,000
Supervisor (day)	$1,000	1	$1,000
Recycle bin (day)	$500	1	$500
Crew Truck (day)	$900	1	$900
Labourer (hour)	$80	2	$1,280
Total			**$8,984**

The costs for Above Ground Tank Removal are described in Table 16.

Table 16: Aboveground Tank Removal

Service	Rates	Units	Service
Service	ON	-	ON
Maintenance Crew w/ 1 Ton picker truck (hour)	$168	2	$336
Combo Unit w/ Swamper (hour)	$360	1	$360
Liquid Disposal (m³)	$80	4	$320
Landfill (Tonne)	$0	0.1	$0
Supervisor (Day)	$1,000	0.5	$500
Excavator (hour)	$195	1	$195
Total			**$1,711**

Key assumptions were used to quantify unit time for the summation of service costs. The following assumptions were applied to determine the demolition & disposal activity costs in Table 17.

Table 17: Service Cost Assumptions

Key Assumptions	Unit	Rate
Workday	Shift (hours/day)	8
Workday – Asbestos Material Removal	Shift (hours/day)	10
Asbestos Material Removal – Interior	Rate (m2/day)	89
Asbestos Material Removal – Floor Covering	Rate (m2/day)	130
Asbestos Material Removal – Wall Covering	Rate (m2/day)	150
Asbestos Material Removal – Ceiling	Rate (m2/day)	40
Asbestos Material Containment (Setup/Tear Down)	Rate (m2)	1.33
Asbestos Material Containment (HEPA negative air)	Rate (m2/day)	1
Asbestos Material Containment (Tension Posts)	Rate (ea/hr)	4
Asbestos Material Disposal Container	Rate (m2/each)	4
Building Demolition	Rate (m2/day)	600
Concrete Removal	Rate (m^3/day)	120
Dump Trailer	Capacity (kg)	3,855
Distance to Disposal Area	(km)	23.9
Travel Time	Round trip (hr)	2.09
Underground Pipe Excavation	Rate (m/day)	75
Wall Height	m	2.4

Demolition & Disposal Activity Costs

360 extrapolated the performance assumptions across the material quantities and service costs. The estimate for demolition and disposal is represented in Table 18.

Table 18: Demolition Costs

Asset Name	Demolition & Disposal	Project Management	Total
Cobalt Golden Age Club	$76,736	$7,674	**$84,409**
Cobalt Historical Society	$23,232	$2,323	**$25,556**
Paul Penna Library	$102,009	$10,201	**$112,210**

Third-Party Demolition Estimate

A third-party cost estimate for the demolition of the Firefighters Museum was completed in 2024 and provided by the Town of Cobalt [30]. 360 utilized the estimate as an override for the asset retirement obligation related to the Firefighters Museum.

Pipeline Excavation & Disposal

Underground pipeline removal and disposal costs were assigned to each pipeline segment according to length, diameter, and occupational health and safety requirements. The characteristics were:

Characteristic	Description
Length	The distance of a pipeline segment from the initiation point to its termination point.
Outside Diameter and Wall Thickness	The outside diameter and wall thickness of a pipeline segment determine its volumetric capacity.

Base pipeline removal and disposal costs are outlined in Table 19.

Table 19: Pipeline Abandonment Costs

Parameter	Ontario
Asbestos Cement Removal (per m)	$77
< 100m Purging (per m)	$1,006
100 – 999 m Pipeline Purge	$2,012
1,000 – 4,999 m Pipeline Purge	$2,514
5,000 – 9,999 m Pipeline Purge	$3,018
>10,000 m Pipeline Purge	$4,022
Fluid Disposal (per m^3)	$55
Project Management (per subtotal)	10%

The costs for Underground Pipe Excavation are described in Table 20.

Table 20: Underground Pipe Removal (m)

Service	Rates	Units	Service
Service	ON	-	ON
Line Locating (day)	$1,095	1	$1,095
Combo Unit w/ Swamper (hour)	$360	1	$3,600
Welder (hour)	$120	1	$1,200
Maintenance Crew w/ 1 T. Picker Truck (hour)	$168	1	$1,680
Excavator w/ Attachment (hour)	$218	1	$2,180
Recycle Bin (day)	$500	1	$500
Winch Tractor w/ Tri-dem Trailer (hour)	$220	1	$2,200
D8 Dozer	$298	1	$2,980
Excavator (hour)	$195	1	$1,950
Subsistence (day)	$0	6	$0
Supervisor (day)	$1,000	1	$1,000
Crew Truck (day)	$900	1	$900
Labourer (hour)	$80	2	$1,600
Total			**$20,885**

CLOSING SUMMARY

The ARO projections in this assessment were calculated using the available historical data, 360's proprietary benchmarking data, and professional judgement. It is possible that unknown conditions may result in large variances from the assigned liability values. The ARO estimate was calculated according to current regulations, technology, and industry practises.

We trust this information meets your present requirements. Please contact Graeme Hawkins at 403-629-9799 should you have any questions.

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APPENDICES: (PROVIDED ELECTRONICALLY)