Town of Gibsons'

Asset Management Program Overview

Formerly the Asset Management Status Update and Implementation Plan

Version 2.0, January 2019

Document Control

Rev No	Document Title	Date	Revision Details	Author	Reviewers
1	Asset Management Status Update and Implementation Plan	January 2017	Final Report	Gracelyn Shannon	Dave Newman, Lorraine Coughlin
2	Asset Management Program Overview	January 2019	Report Update	Gracelyn Shannon	Dave Newman, Lorraine Coughlin, Daniel Tardif

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Executive Summary

The Town of Gibsons has a formalized asset management program to guide the sustainable service delivery of natural and engineered assets. The Asset Management Program Overview is a document asking:

1. Where are we?
2. Where do we want to be?
3. How will we get there?

The Town has an established interdepartmental asset management team to focus and drive the asset management program, with the assistance of industry templates and tools available through National Asset Management System of Canada (NAMS) and Asset Management British Columbia (AMBC).

The asset management team has divided the Town's assets into eight classes for the purpose of the asset management program: Sanitary, Water, Stormwater, Transportation, Gibsons District Energy Utility, Fleet and Equipment, Parks and Civic Lands, and Buildings and Structures. Based on how far along the Town is in the asset management process for a class the maturity of each of the following focuses are rated at a core, intermediate, or advanced level for each:

1. Know Your Assets
2. Know your Financial Situation
3. Understand Decision Making
4. Manage Your Asset Lifecycle
5. Know the Rules
6. Sustainability Monitoring

Four "core elements" drive service delivery: information, finances, people, and assets. AMBC's framework incorporates these core elements to assess practices and assets, develop asset management planning documentation, and finally to implement the program to a financial and operational level.

The Town's assessment process begins with collecting and managing available information, including stakeholder expectations (Council's strategic plans and the Official Community Plan) and asset data (documentation and staff knowledge).

The Town has created a policy that outlines the Town's asset management priorities and the roles of each department in sustainable service delivery. Creating asset management plans for each of the eight asset classes will address unique levels of services, future demands, lifecycle management, finances, improvements, and monitoring.

Finally, a strategy will outline how the plans meet service delivery needs and support organizational objectives, as well as how they will integrate into the Town's long-term planning. These strategies and plans affect long-term operations and financial planning.

The asset management team has agreed on a long-term focuses for advancing the Town's asset management program as well as annual goals (see *Section 4.2 Annual Work Plan*). Throughout the process, the Town's asset management will also focus on continuous improvement opportunities to adapt to changes and growth of the core elements.

1.0 Introduction

A key issue facing local governments throughout Canada is managing aging assets and resources effectively while maintaining acceptable levels of service. Engineered and natural infrastructure assets such as roads, drainage, water, sewerage and public buildings each present their own particular challenges; methods differ for managing each asset class condition, operation, service life, expenditures, renewal, and replacements.

The goal of asset management is to ensure cost-effective and environmentally responsible service provision through the creation, acquisition, maintenance, operation, rehabilitation and disposal of assets for present and future consumers. The objective of the Asset Management Program Overview is to establish a framework to guide the asset management planning process essential for Council to continue effective provision of services to the community and to keep Council and Staff informed on the Program's status.

1.1 Asset Management Organizations

This document references the following asset management planning processes of national and provincial organizations:

> **National Asset Management System of Canada (NAMs)** is a non-profit asset management organization that provides tools, publications, and training for local governments' asset management programs. The Town of Gibsons has subscribed to NAMS.PLUS to receive support, tools, templates, and other resources.
>
> **Asset Management British Columbia (AMBC)** is an asset management working group involved in broad consultation and discussion with local governments and professional associations, as well as private and academic sectors. AMBC has created tools and templates to help guide local governments towards sustainable infrastructure service delivery by combining administrative, technical, operational, financial, planning, and political disciplines.

1.2 Gibsons' Asset Management Team

A collaborative cross-departmental asset management team is in place to ensure the program is meeting needs and requirements of each department. The benefits of an asset management team include:

- championing of asset management process with accountability;
- demonstrating organizational support for sustainable asset management and encouraging corporate buy-in and responsibility;
- coordinating corporate expertise, strategic planning, information technology, departmental needs, and asset management activities;
- promoting uniform asset management practices across the organization;

The role of the asset management team will evolve as the organization maturity increases over several phases. The asset management team developed the first Asset Management Status Update and Implementation Plan document in 2017. The team continues to formalize the asset management program by identifying organizational needs, creating annual work plans (see *Section 4.2 Annual Work Plan*), reviewing asset management documents, representing the Town at industry events, and sharing departmental successes in asset management.

1.3 Asset Class Overview

The Town owns and operates a broad range of infrastructure to provide services to the community. *Table 1: Asset Class Descriptions* shows the asset classes and services provided by each asset class. The eight asset classes listed represent the eight AMPs that will be prepared. Natural assets are included within their appropriate class (for example, the aquifer is included in the Water asset class).

Table 1: Asset Class Descriptions

Class	Description	Services Provided
Sanitary	Wastewater treatment plant, pump station, collection pipe system, manholes, service connections, and an outfall	Wastewater collection, treatment, and disposal
Water	Aquifer, wells, reservoirs, pump station, distribution pipe system, service connections, universal cross-connection control, valves, universal metering, and hydrants	Provide safe drinking water and fire protection
Stormwater	Drainage pipe system, service connections, manholes, catch basins, ponds, outfalls, ditches, swales, and creeks	Stormwater management, flood prevention, environmental enhancement
Transportation	Roads (surface treatments and base layers), curbs, sidewalks, trails, bike lanes, signage and streetlights	Safe transportation for all users including motorized vehicles, pedestrians, and cyclists.
Gibsons District Energy Utility	Pump station, energy fields, distribution piping, and service connections	Localized district energy utility
Fleet and Equipment	Vehicles and equipment components including trucks, light-duty vehicles, and heavy equipment	Light vehicular duty, staff transportation use, snow clearing, earth moving, and excavation and other various maintenance
Parks and Civic Lands	Undeveloped and developed community parks, playing fields, beaches, boardwalk,	Recreation, land areas to support other infrastructure, and green space

Class	Description	Services Provided
	land under roads, and other Town owned land	
Buildings and Structures	Town owned facilities and internal components (furniture and equipment), playgrounds, a skate park, retaining walls, stairs, fencing, and other miscellaneous structures	Safety, protection, recreation and amenities

1.4 Asset Management Levels

AMBC has identified three levels of asset management maturity:

1. **Basic ('Core') Level Asset Management** focuses on essential documentation and planning.
    - Documentation: current knowledge and systems used for managing assets (e.g. software, procedures, or staff experience).
    - Improvement planning: identifying gaps, significance of gaps, plan to progress asset management to the next level of maturity.
2. **Intermediate Level Asset Management** is the basic level of an asset management program but includes improved understanding, detail, completeness, and accuracy in practices and analysis
3. **Advanced Level Asset Management** has asset management practices that
    - are implemented ensuring long-term sustainability
    - involve a high level of knowledge, completeness, and accuracy
    - use formalized procedures for continuous improvement

Appendix A: Asset Management Road Map is a self-assessment tool showing these levels as a color-coded road map and self-assessment tool. *Appendix B: Road Map Status and Task List* outlines the maturity status of the Town's eight asset classes. AssetSMART2.0 is an additional AMBC tool. *Appendix C: AssetSMART2.0* shows the status of the Town of Gibsons in the asset management planning process.

1.5 Asset Management Planning Process

Asset management planning is a process to create and maintain assets in a way that provides essential services in an economically, socially, and environmentally responsible manner. Data quality and process efficiencies need to be constantly reviewed and improved. A good asset management program will be looking for constant improvement through planning and assessment.

Figure 1: AMBC Asset Management Framework

The intended flow of information and documents for a fomalized asset management planning process is shown in *Figure 2: Asset Management Planning Process*. The process begins with assessing current practices, community expectations, and knowledge management. Next, documents are developed, including an asset management policy, individual AMPs, and incorporated strategic plans. These plans are then implemented with a long-term financial plan with a funding plan.

Figure 2: Asset Management Planning Process

Note: Asset Management Status Update and Implementation Plan now known as the Asset Management Program Overview.

2.0 Where are we?

2.1 ASSESS: Strategic Planning

2.1.1 Stakeholder Requirements and Expectations

With aging infrastructure across the nation and an increasing gap between available resources versus what the public expects, asset management continues to be at the forefront of local government conversations.

The Official Community Plan (OCP) is an important guideline for understanding stakeholder requirements and expectations. The OCP already considers asset management; however, AMPs may influence future iterations.

Stakeholder requirements and expectations consists of conversations between staff, Council, and the public. The Town's staff informs Council on relevant information and professional recommendations in a timely manner to ensure well-informed political decisions. Council considers staff recommendations as well as the concerns of the public to make the important political levels of service decisions. Staff and Council work together to ensure communication of the current infrastructure gap to the public. The newly elected (2018) Council will be defining political strategic priorities in the coming year. Where appropriate, these initiatives will be integrated with the current program.

Staff have created a first draft of information sheets for each asset class as a quick-reference guide for Council and the public. These highlight replacement costs, levels of service, funding shortfalls, and community goals where the information is available. Latest draft versions of the fact sheets are available in *Appendix D: Town of Gibsons Asset Highlights*.

In addition, the asset management team is exploring a formalized communication plan for the public.

2.1.2 Knowledge Management

Reliable data is fundamental to asset management planning as analyses and plans can only be as accurate as the information base. Well-managed information should be accessible, current, complete, and correct. Processes need to be in place moving forward to capture information collected in development, studies, or general knowledge. New information, infrastructure, staff, and processes update the knowledge base.

Software systems manage available information from documentation and staff knowledge. *Appendix B: Road Map Status and Task List* further explores addressing missing process, inventory, value, condition, and capacity data.

Software

Information-management continues to move from manual paper-based methods to computer-based software. Staff departments use various software for managing data:

- AssetFinda is an infrastructure information management tool with financial, operations, and engineering functions including:
  - Displaying live infrastructure maps including field data capture; Digital defect and condition inspections;
  - Works request management; and
  - Financial reporting and modeling.

  The Town has implemented the works requests management functionality as well as the mapping. Further integration of the software with Public Works operations and Financial data management will be explored in this coming year (see *4.2 2017 Work Plan*).
- GIS software manages access and display of geospatial information, and enables staff to create various maps.
- Various software used by the finance department manage financial-related asset data and processes.
- FastFields is an iPad software used by Parks and Public Works crews for inspections. The information is immediately accessible by PDF file or exported to Excel, where the data can be used for analytics, planning, or to produce maps.

Documentation

The Town of Gibsons has developed documents related to infrastructure management that will be important to consider while creating the AMPs. These documents include asset class plans, studies, infrastructure assessments, bylaws, and policies. Ideally, updates of these documents occur at intervals of no greater than 10 years. A list of relevant documents by asset class is available in *Appendix E: Relevant Documentation*.

Staff Knowledge

The Town of Gibsons has a collaborative approach to asset management; Council and all departments are working together to ensure sustainable infrastructure management. All departments at the Town of Gibsons have a role in the asset management program as shown in *Appendix F: Asset Management Policy*, as well as *2.2.3 Asset Management Plans*.

2.2 PLAN: Program Framework

2.2.1 Asset Management Policy

Appendix F: Asset Management Policy (2019 Draft) defines terms, objectives, principles, and responsibilities for asset management in the Town of Gibsons. This policy focuses on establishing priorities, expectations, direction, commitments, and plans for integration.

2.2.2 Asset Management Program Overview

This strategy document outlines where the Town is in the formalize asset management planning process, where the Town wants to be, and how the Town will get there. This document updates Council and the public on the current asset management program and create direction for staff and the asset management team moving forward.

In addition, the document will consolidate information used for Gas Tax Reporting requirements, which require:

- asset management baseline template, which identifies gaps and demonstrates improvements at the organizational level;
- implementation plan to strengthen asset management process and identify activities, actions, and milestones; and
- asset management reporting.

Updates occur annually until each asset class has developed an AMP, or otherwise when the Town's asset management program undergoes significant changes.

2.2.3 Asset Management Plans

Staff will develop Asset Management Plans for each asset class listed in *Table 1: Asset Class Descriptions* using templates provided by the NAMs program. Plans assess the current state of an asset class to identify the "what, when, and how much" for infrastructure management. Each plan will outline how to close the gaps between resources, service levels, risk, and process.

AMPs can be created even with a low level of asset management maturity (see *1.4 Asset Management Levels*), but the plans greatly benefit from accurate and complete data. Iterations will reflect significant changes in the infrastructure class's processes, finances, or data (see section *3.2 Continuous Improvement*). AMPs will include the following sections:

1. Levels of service
2. Future demand
3. Lifecycle management plan
4. Financial summary
5. Plan improvement and monitoring

Each plan will require feedback from multiple departments.

Table 2: Asset Management Plan Roles

Role	Section	Discussion
Council	Levels of Service	• Stakeholder research and expectations • Strategic and corporate goals • Legislative requirements • Community levels of service
	Financial Summary	• Funding strategy
	Levels of Service	• Technical and legislated levels of service

Role	Section	Discussion
Infrastructure Services	Future Demand	• Demand impact on assets
	Lifecycle Management	• Infrastructure risk management plans • Renewal, replacement programs • Creation, acquisition, upgrade plans • Disposal plans
	Finance Summary	• Valuation forecasts • Funding strategy
Operations and Maintenance	Future Demand	• Asset programs to meet demand
	Lifecycle Management Plan	• Infrastructure risk management plan • Routine operations and maintenance plan • Renewal and replacement program • Service consequences and risks
	Financial Summary	• Operations and maintenance costs
Planning	Future Demand	• Demand drivers • Demand forecast
Finance	Financial Summary	• Financial statements and projections • Funding strategy • Valuation forecasts • Key assumptions made in financial forecasts • Forecast reliability and confidence

2.2.4 Asset Management Strategy

An asset management strategy is a guide for implementing AMPs detailing the following:

- how the asset portfolio will meet the service delivery needs of its community into the future;
- how Council's asset management policies are enabled to be achieved; and
- how Council's asset management integrates with long-term strategic plans.

The strategy follows the AMP's review of infrastructure service delivery, financial sustainability, asset management maturity, and Council's vision for the future.

2.3 IMPLEMENT: Service Delivery

2.3.1 Operations and Maintenance

The Infrastructure Service's Public Works and Parks departments manage assets over their lifecycle, including operations and maintenance. The expertise of the field staff is crucial to maximizing the lifespan of the assets, managing risk, having feedback on decisions at the design level, and renewal and replacement needs of the Town.

Fixing or replacing a component only when something breaks or wears down is reactive maintenance. This method is costly and time-consuming. Proactive maintenance involves scheduling activity to extend the useful life of an asset and to

minimize emergency or unplanned costs. *Appendix G: Routine Operations and Maintenance* provides task details and annual schedules for each Parks, Public Works, Plants, and Infrastructure Services.

A more formalized approach to Operations and Maintenance planning is underway for the Town. This includes Routine Operations and Maintenance documents with task details, procedures, work planning data, consolidation of relevant documents, and identified improvement opportunities. A policy review is also under way to identify liability risks and opportunities for procedural improvements.

Data collected by field staff is important for planning and analytics. The Town has digitized inspection and field data collection processes which has greatly improved data management, legal documentation, and knowledge transfer.

2.3.2 Finance

The Finance Department is responsible for establishing financial plans for consideration by Council that will ensure stable, long-term funding for operations, maintenance, renewal, replacement and/or disposal of assets.

Asset Management Plans will highlight gaps between existing and required funding levels, and provide the information needed to determine the amount and timing of funding required. Based on this information, staff will recommend programs to meet operational and capital needs. This information incorporates the Town's five-year Financial Plan Bylaw adopted each year by Council, as required by the Community Charter.

In addition to looking for efficiencies in operations and renewal programs, further mechanisms that support sustainable funding include appropriate rate setting, suitable reserve levels, strategic use of debt, and reduced reliance on grant funding for asset replacement requirements provides stable funding. While funding requirements for overall operational needs at existing levels of service are in place, establishing sufficient and reliable funding for asset renewal and replacement is a challenge. This is a challenge that many municipalities are grappling with.

Developed long-term financial plans for the water and sewer utilities as well as a proposed series of rate increases are in place to create stable funding and build appropriate reserves, while reducing reliance on grant funding. Staff and Council review these plans annually as part of the budget process.

3.0 Where Do We Want to Be?

Formalizing an asset management program is a first step in obtaining sustainable service delivery. Plans facilitate risk management, community engagement, financial decisions, capital and renewal planning conversations, and gather the different priorities of all departments to ensure a collaborative, obtainable plan.

3.1 AMBC Roadmap

AMBC published an Asset Management Roadmap Project in May of 2011 (see *Appendix A: Asset Management BC Road*). The roadmap uses six general category headlines with subcategories, which fall under one of the levels of asset management (core, intermediate, and advanced):

1. Know Your Assets
2. Know Your Financial Situation
3. Understand Decision Making
4. Manage Your Asset Lifecycle
5. Know the Rules
6. Sustainability Monitoring

AMBC periodically publishes updates based on feedback or the collaboration of BC asset management professionals. The Town of Gibsons recognizes room for improvement on the ABMC Road Map; however, the Town will continue to use the current published version in the interest of keeping to a consistent industry standard.

Appendix B: Road Map Status and Task List by Asset Class defines the status of the Town's asset management for each asset class, and highlights which gaps need to be filled, as well as where and how to move forward.

3.2 Continuous Improvement

The Town of Gibsons is committed to excellence through continuous, measureable improvement. The asset management industry is still evolving with more tools and concepts coming available to local governments every year. The asset management program should reflect the improvement of data and processes over time, as well as feedback on the asset management program from staff departments, Council, or consultants. Being open to this communication and feedback will make the program as effective, accepted, and relevant as possible.

In addition, improvement plans integrate into the AMP and strategy templates. These task-based lists are an opportunity to recognize what is outstanding before the next iteration of documents to improve data, processes, or analysis.

4.0 How Will We Get There?

The Town of Gibsons has made significant progress in understanding and applying asset management principles. The asset management team will be moving the asset management program forward integrating tools and methods available through NAMs and AMBC programs.

4.1 The Core Elements

Asset management at the Town of Gibsons will be integrating the following Core Elements to move the program forward:

People

Staff and Council who:

- understand asset management and its importance to sustainable service delivery;
- are committed to improvement, with effective leadership supportive of departmental integration;
- value informed decision making; and
- are open to developing and sharing knowledge, experience, and capacity.

Information

Reasonably complete and accurate data that supports and communicates financial, sustainability, and risk management decisions.

Assets

Current and future infrastructure systems or facilities managed by the Town, including Natural Assets.

Finances

Informed financial long and short term planning that supports sustainability, reserves, reducing risk, total lifecycle costs.

These elements are necessary for an effective program and directly relate to sustainable service delivery. *Asset Management for Sustainable Service Delivery: A BC Framework* also outlines the importance of the iterative process of 'communicate, engage, and review'. *Appendix C: AssetSMART2.0* further uses these core elements to show the status of the Town's asset management program.

4.2 Annual Work Plan

The Asset Management Team will agree on a collective work plan annually, including assignments and timelines. All tasks listed should correlate with the AMBC Road Map and generally further the asset management program.

Asset Management Annual Work Plans and Status Updates for 2017, 2018, and 2019 are available in *Appendix H: Annual Work Plans and Status Updates*.

Appendix A: Asset Management BC Road Map

AMBC : Asset Management Building Blocks : Roadmap

1.0 _Know Your Assets	2.0 _Know Your Financial Situation	3.0 _Understand Decision-Making	4.0 _Manage Your Asset Lifecycle	5.0 _Know the Rules	6.0 _ Sustainability Monitoring

Consultation / Communication

1.1_Basic Asset Inventory
a) Asset Type
b) Location
c) Quantity & Size
d) Material
e) Useful Life
f) Install Date & Age
g) Remaining Life

1.2_Componentized Asset Inventory

1.3_Current Data Software and Tools
a) Asset data
b) Accounting
c) Work history
d) Decision tools
e) GIS

1.4_Data Management
a) Data accuracy
b) Data completeness
c) Data gaps
d) Data controls

1.5_Data Accessibility
a) Data format
b) Geographic Links
c) Condition data
d) Financial data

1.6_Data, Software and Tools Strategy
a) Current Tools
b) Data Management
c) Data Accessibility
d) Decision Tools

2.1_Current Asset Investment
a) Replacement Value
b) Depreciated Value

2.2_Current O&M Costs
a) Historical O&M Costs
b) Current O&M Costs

2.3_Future Capital Costs
Multi-year Plans
a) Renewal Projects
b) New Assets

2.4_Funding Sources
Multi-year Plans
a) Taxes
b) Revenue
c) Funding Rules

2.5_Future O&M Costs
Multi-year Plans
a) Operational Costs
b) Maintenance Costs

2.6_Maintenance Liability
a) Current Deferred Maintenance Costs
b) Investment Strategies

2.7 Optimized Capital Plan
a) Renewal Plan
b) Improvement Plan

3.1_Evaluate Decision Process
a) Current Processes
b) Desired Processes
c) Improvement Gap

3.2_Improvement Plan & Process
a) Identify tasks
b) Develop basic plan
c) Implement Improvement Process

3.3_Prioritized Improvement Plan
a) Develop prioritization process / tool
b) Budget / Timelines

3.5 Collaboration / Integration Plan
a) Internal between Departments
b) External between Organizations

3.6 Advanced Decision-Making Tools & Software

3.7 Improvement Strategies

4.1_Asset Condition
a) Current Condition
b) Condition Rating
c) Condition Monitoring
d) Deterioration Modelling
e) Work History Tracking

4.2_Level of Service
a) Current LoS
b) Desired LoS
c) Performance Measures and Monitoring

4.3_Assess Asset Renewal Alternatives
a) Treatment Options
b) Evaluation
c) Treatment Selection
d) Review Outcome

4.4_Assess Asset Maintenance Strategies
a) Maintenance Options
b) Evaluation
c) Develop Strategy
d) Review Outcome

4.5_Lifecycle Strategies
a) Operations
b) Maintenance
c) Renewals
d) New Assets

4.6_Utilization and Demand

4.7 Optimize Treatment Selection

4.8 Level of Service / Cost of Service Reviews

4.9 Optimized Level of Service
a) Target LoS
b) Budget Service Cost

5.1_Strategic Goals
a) Organizational Goals
b) Stakeholder Goals

5.2_Legislation, Regulation, Policy & Standards
a) List of requirements
b) Associated Policies & Best Practice Standards

5.3_Monitoring
a) State of compliance
b) Measuring compliance

5.4_Reporting
a) Compliance Results
b) Benchmark Comparisons

5.5_Ownership Issues
a) History
b) Benefits
c) Options

5.6_Risk Evaluation
a) Risk Assessment
b) Mitigation Measures

5.7 Review of Goals and Performance Targets

6.1_Sustainability Assessment
a) Current state of sustainability
b) Desired Processes
c) Improvement Gap

6.2_Co-ordinating Infrastructure Works
a) Identify Tasks
b) Develop Basic Plan
c) Implement Improvement Process

6.3_Demand Management
a) Alternative strategies

6.4 Emerging Technology
a) Alternative strategies
b) Innovation

Colour Key for Asset Management (AM) Practice Modules

- Modules required for Basic Level Asset Management (AM)
- Additional Modules required for Intermediate AM
- Advanced Asset Management Practice Modules

Appendix B: Road Map Status Update by Asset Class

Asset Class

ROAD MAP STATUS

The following sheets outline the status of each asset class as defined by the Asset Management BC Roadmap. In 2017, the status was shown by highlighting a Block in the road map per each column. Under further review in 2019, Staff agreed that the map is not linear, and therefore a per-block "In Progress" or Completed" is more appropriate. Each of these provide both the 2017 status (black box), and the 2019 status ('in progress' clock or 'completed' check mark).

LEGEND

Basic Level

Intermediate Level

Advanced Level

2017 Status

In Progress (2019)

Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

Tasks were identified in 2017 to close the gaps for each asset class up to and including the current AM Road Map status provided. Updated status per task is provided for 2019.

Sanitary

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	3.1 Evaluate Decision Process	4.1 Asset Condition	5.1 Strategic Goals	✓ 6.1 Sustainability Assessment
1.2 Componentized Asset Inventory	2.2 Current O&M Costs	3.2 Improvement Plan and Process	4.2 Levels of Service	✓ 5.2 Legislation, Regulation, Policy, and Standards	6.2 Coordinating Infrastrcture Works
✓ 1.3 Current Data Software and Tools	✓ 2.3 Future Capital Costs	3.3 Prioritized Improvement Plan	4.3 Assess Asset Renewal Alternatives	✓ 5.3 Monitoring	6.3 Demand Management
✓ 1.4 Data Management	✓ 2.4 Funding Sources	✓ 3.4 Collaboration / Integration Plan	✓ 4.4 Assess Asset Maintenance Strategies	✓ 5.4 Reporting	6.4 Emerging Technology
1.5 Data Accessibility	2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	4.5 Lifecycle Strategies	5.5 Ownership Issues	
✓ 1.6 Data, Software and Tools Strategy	2.6 Maintenance Liability	3.6 Improvement Strategies	4.6 Utilitization and Demand	✓ 5.6 Risk Evaluation	
	✓ 2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

In Progress (2019)

✓ Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.

	2017 Tasks	2019 Status Update
1.0 Know Your Assets		
1.2 Componentizes Asset Inventory	• Inventory individual components of the wastewater treatment plant and lift station	Under review
1.3 Current Data Software and Tools	• Merge PSAB and AssetFinda financial data	Under review
1.5 Data Accessibility	• Translate CCTV footage to condition ratings	In progress
1.6 Data, Software and Tools Strategy	• diameter of inventory with CCTV program (Annual 2016-2023)	(no update)
2.0 Know Your Financial Sitatuion		
2.1 Current Asset Investment	• Gather financial data and replacement values of treatment plant, pumps, lift stations	(no update)
	• Import Detailed Unit Costs Available	Completed
3.0 Understand Decision Making		
3.1 Evaluate Decision Process	• Identify desired processes and document improvement gap	Completed
3.3 Prioritized Improvement Plans	• Develop prioritization processes	(no update)
4.0 Manage Your Asset Lifecycle		
4.2 Level of Service	• Define level of service options	(no update)
6.0 Sustainability		
6.1 Sustainability Assessment	• Define desired processes	(no update)
6.2 Coordinating Infrastructure Works	• Implement improvement processes	In progress
6.3 Demand Management	• Consolidate studies and import capacity issues to AssetFinda	(no update)

Water

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	◷ 3.1 Evaluate Decision Process	◷ 4.1 Asset Condition	✓ 5.1 Strategic Goals	✓ 6.1 Sustainability Assessment
◷ 1.2 Componentized Asset Inventory	✓ 2.2 Current O&M Costs	3.2 Improvement Plan and Process	◷ 4.2 Levels of Service	✓ 5.2 Legislation, Regulation, Policy, and Standards	✓ 6.2 Coordinating Infrastrcture Works
✓ 1.3 Current Data Software and Tools	✓ 2.3 Future Capital Costs	✓ 3.3 Prioritized Improvement Plan	4.3 Assess Asset Renewal Alternatives	✓ 5.3 Monitoring	◷ 6.3 Demand Management
✓ 1.4 Data Management	✓ 2.4 Funding Sources	3.4 Collaboration / Integration Plan	◷ 4.4 Assess Asset Maintenance Strategies	✓ 5.4 Reporting	6.4 Emerging Technology
✓ 1.5 Data Accessibility	✓ 2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	◷ 4.5 Lifecycle Strategies	✓ 5.5 Ownership Issues	
✓ 1.6 Data, Software and Tools Strategy	◷ 2.6 Maintenance Liability	3.6 Improvement Strategies	✓ 4.6 Utilitization and Demand	✓ 5.6 Risk Evaluation	
	✓ 2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

◷ In Progress (2019)

✓ Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.

	2017 Tasks	2019 Status Update
1.0 Know Your Assets		
1.2 Componentizes Asset Inventory	• Inventory individual components of the reservoir and pump station	Completed
1.3 Current Data Software and Tools	• Digitize inspection and condition forms, works requests, and maitnenance schedules	Completed
1.4 Data Management	• Address minor data gaps	In progress
2.0 Know Your Financial Sitatuion		
2.1 Current Asset Investment	• Import updated unit costs • Input updated costs of replacement of wells (pumps and motors)	Completed (no update)
4.0 Manage Your Asset Lifecycle		
4.1 Asset Condition	• Input criticality asset information into AssetFinda	Complete
5.0 Know the Rules		
5.5 Ownership Issues	• Define ownership options • Pursue fringe area agreement for aquifer protection	(no update) In progress
6.0 Sustainability Monitoring		
6.1 Sustainability Assessment	• Outline desired processes	In progress
6.2 Coordinating Infrastructure Works	• Implement improvement processes	In progress

Drainage

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	🕐 3.1 Evaluate Decision Process	🕐 4.1 Asset Condition	✓ 5.1 Strategic Goals	✓ 6.1 Sustainability Assessment
✓ 1.2 Componentized Asset Inventory	✓ 2.2 Current O&M Costs	✓ 3.2 Improvement Plan and Process	4.2 Levels of Service	✓ 5.2 Legislation, Regulation, Policy, and Standards	🕐 6.2 Coordinating Infrastrcture Works
✓ 1.3 Current Data Software and Tools	✓ 2.3 Future Capital Costs	✓ 3.3 Prioritized Improvement Plan	✓ 4.3 Assess Asset Renewal Alternatives	✓ 5.3 Monitoring	✓ 6.3 Demand Management
✓ 1.4 Data Management	✓ 2.4 Funding Sources	✓ 3.4 Collaboration / Integration Plan	🕐 4.4 Assess Asset Maintenance Strategies	5.4 Reporting	✓ 6.4 Emerging Technology
🕐 1.5 Data Accessibility	2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	🕐 4.5 Lifecycle Strategies	🕐 5.5 Ownership Issues	
✓ 1.6 Data, Software and Tools Strategy	🕐 2.6 Maintenance Liability	3.6 Improvement Strategies	✓ 4.6 Utilitization and Demand	✓ 5.6 Risk Evaluation	
	✓ 2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

🕐 In Progress (2019)

✓ Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.

	2017 Tasks	2019 Status Update
1.0 Know Your Assets		
1.6 Data, Software and Tools Strategy	• Confirm service connection, material, and diameter of inventory with CCTV program (Annual 2016-2023)	In progress
	• Update ISMP	Completed
	• Inventory ditches and culverts	Completed
2.0 Know Your Financial Sitatuion		
2.2 Current O&M Costs	• Gather historical O&M costs data	(no update)
2.3 Future Capital Costs	• Identify and formalize renewal projects	Completed
4.0 Manage Your Asset Lifecycle		
4.1 Asset Condition	• Input condition and asset information into	In progress
	• Establish a schedule for a Qualified Envrionmental Professional to inspect natural	In progress
	• Inspect culverts	Completed
4.2 Levels of Service	• Define level of service options	(no update)
5.0 Know the Rules		
5.3 Monitoring	• Monitor creek flows	In progress

Transportation

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
1.1 Basic Asset Inventory	2.1 Current Asset Investment	3.1 Evaluate Decision Process	4.1 Asset Condition	5.1 Strategic Goals	6.1 Sustainability Assessment
1.2 Componentized Asset Inventory	2.2 Current O&M Costs	3.2 Improvement Plan and Process	4.2 Levels of Service	5.2 Legislation, Regulation, Policy, and Standards	6.2 Coordinating Infrastrcture Works
1.3 Current Data Software and Tools	2.3 Future Capital Costs	3.3 Prioritized Improvement Plan	4.3 Assess Asset Renewal Alternatives	5.3 Monitoring	6.3 Demand Management
1.4 Data Management	2.4 Funding Sources	3.4 Collaboration / Integration Plan	4.4 Assess Asset Maintenance Strategies	5.4 Reporting	6.4 Emerging Technology
1.5 Data Accessibility	2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	4.5 Lifecycle Strategies	5.5 Ownership Issues	
1.6 Data, Software and Tools Strategy	2.6 Maintenance Liability	3.6 Improvement Strategies	4.6 Utilitization and Demand	5.6 Risk Evaluation	
	2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

In Progress (2019)

Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.

	2017 Tasks	2019 Status Update
1.0 Know Your Assets		
1.2 Componentizes Asset Inventory	• Breakdown asphalt into level components on AssetFinda	(no update)
1.3 Current Data Software and Tools	• Formalize inventory and finance data management in AssetFinda	(no update)
1.4 Data Management	• Formalize process for capturing new inventory information	(no update)
	• Review sidewalks, curbs, and streetlight inventory for completeness	(no update)
	• Input rehabilitation study information into AssetFinda	(no update)
2.0 Know Your Financial Sitatuion		
2.1 Current Asset Investment	• Gather and input historical unit costs for asphalt, curbs, sidewalks, and streetlights	(no update)
3.0 Understand Decision Making		
3.1 Evaluate Decision Process	• Formalize current processes through policy	(no update)
	• Formalize funding plans and levels of service	(no update)
4.0 Manage Your Asset Lifecycle		
4.1 Asset Condition	• Digitize work history	In progress
	• Inventory and inspect curbs, sidewalks, and streetlights	Under review
4.2 Levels of Service	• Define desired levels of service	(no update)
	• Formalize level of service options	(no update)
4.3 Assess Asset Renewal Alternatives	• Develop strategy for asset renewals	(no update)
5.0 Know the Rules		
5.1 Strategic Goals	• Define stakeholder goals	(no update)
5.3 Monitoring	• Meaure compliance	(no update)
5.4 Reporting	• Benchmark comparisons	(no update)
6.0 Sustainability Monitoring		
6.1 Sustainability Assessment	• Define desired processes and improvement gap	(no update)
6.2 Coordinating Infrastructure Works	• Implement improvement process	(no update)

District Energy Utility

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	3.1 Evaluate Decision Process	4.1 Asset Condition	✓ 5.1 Strategic Goals	6.1 Sustainability Assessment
1.2 Componentized Asset Inventory	✓ 2.2 Current O&M Costs	3.2 Improvement Plan and Process	✓ 4.2 Levels of Service	✓ 5.2 Legislation, Regulation, Policy, and Standards	6.2 Coordinating Infrastrcture Works
✓ 1.3 Current Data Software and Tools	2.3 Future Capital Costs	3.3 Prioritized Improvement Plan	4.3 Assess Asset Renewal Alternatives	5.3 Monitoring	6.3 Demand Management
✓ 1.4 Data Management	2.4 Funding Sources	✓ 3.4 Collaboration / Integration Plan	4.4 Assess Asset Maintenance Strategies	5.4 Reporting	6.4 Emerging Technology
✓ 1.5 Data Accessibility	2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	✓ 4.5 Lifecycle Strategies	✓ 5.5 Ownership Issues	
✓ 1.6 Data, Software and Tools Strategy	2.6 Maintenance Liability	3.6 Improvement Strategies	✓ 4.6 Utilitization and Demand	✓ 5.6 Risk Evaluation	
	2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

In Progress (2019)

Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.

	2017 Tasks	2019 Status Update
1.0 Know Your Assets		
1.2 Componentizes Asset Inventory	• Inventory individual components of the pump station	In progress
1.4 Data Management	• Identify and fill data gaps	In progress
2.0 Know Your Financial Sitatuion		
2.1 Current Asset Investment	• Research construction records and import values into AssetFinda	(no update)
	• Compare actual capital, operations, and maintenance costs to projected costs	(no update)
4.0 Manage Your Asset Lifecycle		
4.2 Levels of Service	• Define performance measures and monitoring	Completed (?)

Fleet and Equipment

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	3.1 Evaluate Decision Process	4.1 Asset Condition	✓ 5.1 Strategic Goals	6.1 Sustainability Assessment
1.2 Componentized Asset Inventory	✓ 2.2 Current O&M Costs	3.2 Improvement Plan and Process	4.2 Levels of Service	✓ 5.2 Legislation, Regulation, Policy, and Standards	✓ 6.2 Coordinating Infrastrcture Works
✓ 1.3 Current Data Software and Tools	✓ 2.3 Future Capital Costs	3.3 Prioritized Improvement Plan	✓ 4.3 Assess Asset Renewal Alternatives	✓ 5.3 Monitoring	6.3 Demand Management
1.4 Data Management	✓ 2.4 Funding Sources	✓ 3.4 Collaboration / Integration Plan	4.4 Assess Asset Maintenance Strategies	5.4 Reporting	✓ 6.4 Emerging Technology
✓ 1.5 Data Accessibility	✓ 2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	4.5 Lifecycle Strategies	✓ 5.5 Ownership Issues	
✓ 1.6 Data, Software and Tools Strategy	2.6 Maintenance Liability	3.6 Improvement Strategies	4.6 Utilitization and Demand	5.6 Risk Evaluation	
	2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

In Progress (2019)

✓ Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.
2019 Update: Fleet and Equipment Asset Management Plan was completed in 2018. The process included an asset registry review, average annual cost, replacement schedule, demand management and risk overviews.

	2017 Tasks	2019 Status Update
6.0 Sustainability Monitoring		
6.3 Demand Management	• Review replacement program's actual vs projected condition	In progress

Parks and Civic Lands

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	3.1 Evaluate Decision Process	✓ 4.1 Asset Condition	✓ 5.1 Strategic Goals	6.1 Sustainability Assessment
1.2 Componentized Asset Inventory	✓ 2.2 Current O&M Costs	3.2 Improvement Plan and Process	✓ 4.2 Levels of Service	✓ 5.2 Legislation, Regulation, Policy, and Standards	6.2 Coordinating Infrastrcture Works
✓ 1.3 Current Data Software and Tools	✓ 2.3 Future Capital Costs	3.3 Prioritized Improvement Plan	4.3 Assess Asset Renewal Alternatives	✓ 5.3 Monitoring	6.3 Demand Management
✓ 1.4 Data Management	✓ 2.4 Funding Sources	✓ 3.4 Collaboration / Integration Plan	4.4 Assess Asset Maintenance Strategies	✓ 5.4 Reporting	6.4 Emerging Technology
1.5 Data Accessibility	2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	4.5 Lifecycle Strategies	✓ 5.5 Ownership Issues	
1.6 Data, Software and Tools Strategy	2.6 Maintenance Liability	3.6 Improvement Strategies	4.6 Utilitization and Demand	5.6 Risk Evaluation	
	2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

Basic Level

Intermediate Level

Advanced Level

2017 Status

In Progress (2019)

Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

As the Parks asset class has not yet been integrated into the asset management program, no tasks have yet been identified to close gaps up to and including the current AM Road Map status provided above.

2019 Update: The Parks Department has been involved in Parks asset inventories collection and field condition assessments. In addition, routine monthly inspections have been digitized.

Buildings and Structures

ROAD MAP STATUS

1.0 Know Your Assets	2.0 Know Your Financial Situation	3.0 Understand Decision Making	4.0 Manage Your Asset Lifecycle	5.0 Know the Rules	6.0 Sustainability Monitoring
Consultation/Communication					
✓ 1.1 Basic Asset Inventory	✓ 2.1 Current Asset Investment	3.1 Evaluate Decision Process	4.1 Asset Condition	✓ 5.1 Strategic Goals	6.1 Sustainability Assessment
1.2 Componentized Asset Inventory	✓ 2.2 Current O&M Costs	3.2 Improvement Plan and Process	4.2 Levels of Service	5.2 Legislation, Regulation, Policy, and Standards	6.2 Coordinating Infrastrcture Works
1.3 Current Data Software and Tools	2.3 Future Capital Costs	3.3 Prioritized Improvement Plan	4.3 Assess Asset Renewal Alternatives	5.3 Monitoring	6.3 Demand Management
1.4 Data Management	2.4 Funding Sources	3.4 Collaboration / Integration Plan	4.4 Assess Asset Maintenance Strategies	5.4 Reporting	6.4 Emerging Technology
1.5 Data Accessibility	2.5 Future O&M Costs	3.5 Advanced Decision Making Tools and Software	4.5 Lifecycle Strategies	✓ 5.5 Ownership Issues	
1.6 Data, Software and Tools Strategy	2.6 Maintenance Liability	3.6 Improvement Strategies	4.6 Utilitization and Demand	5.6 Risk Evaluation	
	2.7 Optimized Capital Plan		4.7 Optimize Treatment Selection	5.7 Review of Goals and Performance Targets	
			4.8 Levels of Service / Cost of Service Reviews		
			4.9 Optimized Level of Service		

- Basic Level
- Intermediate Level
- Advanced Level
- 2017 Status
- In Progress (2019)
- ✓ Completed (2019)

ROAD MAP GAPS AND ASSET CLASS TASK LIST

The following tasks have been identified to close the gaps up to and including the current AM Road Map status provided above.
2019 Update: Basic inventory including overall attributes is now in Asset Finda.

	2017 Task	2019 Status Update
4.0 Manage Your Asset Lifecycle		
4.2 Levels of Service	• Define desired levels of service	(no update)

Appendix C: AssetSMART2.0

AssetSMART 2.0

A Tool to Assess Your Community's Asset Management Practices

What is AssetSMART?

AssetSMART is a tool that local governments can use to assess their capacity to manage their assets. This tool has been designed to help local governments:

- Evaluate their asset management practices in a comprehensive way
- Identify particular areas of strength and areas for improvement
- Establish priorities
- Build awareness of the many dimensions of asset management
- Generate productive discussion across departments
- Measure progress over time
- Benchmark against other communities
- Set short-, mid-, and long-term objectives in specific areas

Which communities should use AssetSMART?

AssetSMART has been specifically designed to reflect the unique challenges that local governments face in managing their assets. This tool is intended to be used by any local government, of any size, and at any stage of implementing an asset management program. Whether your community is in the initial or advanced stages of asset management, AssetSMART can help your organization take stock of where it is today and plan for the future.

DATE January 2019

NAME Town of Gibson's Asset Management Team

ORGANIZATION Town of Gibsons

NOTE: 2017 Status in Yellow Highlighter, 2019 Status Update in Red Box.

The Framework

AssetSMART uses Asset Management for Sustainable Service Delivery: A BC Framework (the Framework) as a foundation. The Framework establishes a high-level, systematic approach that supports local governments in moving toward service, asset and financial sustainability through an asset management process.

The Core Elements of Asset Management

People, Information, Assets, and Finances are considered the core elements of asset management. Each of these elements are necessary for sustainable service delivery. Success requires the integration of these four elements throughout the process of asset management. The four core elements form the AssetSMART assessment categories.

VERSION 2.01

Using AssetSMART 2.0

Step 1 Assess Current Capacity

For each of the rows, choose the cell that most closely describes your organization's capacity today (simply check the appropriate box). If you feel that your organization falls between two cells, choose the line between the two cells. Add comments as needed in the adjacent column.

The assessment matrix is organized into the five core capacity areas (rows), and by capacity level (columns). Capacity increases from left to right as follows:

Level (1) Very low capacity
Level (2) Fair capacity
Level (3) Good capacity
Level (4) High capacity

Step 2 Identify Desired Capacity

For each of the rows, choose the cell that most closely describes the level of capacity that you would like your organization to have in the future. You may want to indicate desired capacities for a given timeframe, as your organization may have different short-, mid-, and long-term objectives.

Defining "desired capacity levels" will likely be more difficult than identifying "current capacity levels", and will require organization-wide discussion to establish attainable objectives. It is not suggested that all communities aim for Level (4) capacity on all components – targets will need to reflect the specific circumstances of each community.

Who should fill in the self-assessment?

Effectively managing a community's assets will require the participation of many individuals and groups from across the organization. At a minimum, personnel responsible for the following functions should be invited to participate in the self-assessment:

- Engineering (transportation, water, sanitary, stormwater)
- Facilities
- Parks and Recreation
- Operations
- Planning (current and long-range)
- Finance

How should the self-assessment be completed?

Local governments can opt to fill in the self-assessment in a number of ways, such as:

A group (whole organization)
Local governments may choose to complete the assessment together as a group in workshop format, to help ensure that all participants are on the same page. This approach can effectively build buy-in from the entire group, but may not highlight significant differences in understanding across the organization.

Individually
Alternatively, local governments may choose to ask each participant to complete the assessment independently, and then meet as a group to review the results. Providing respondents with the assessment prior to meeting as a group can help ensure that individual input is fully explored, and bring to light any significant differences in understanding across the organization.

Business units
Other local governments may choose to complete the assessment first by business unit or department, and then discuss the results as an entire organization.

Local governments will need to choose an approach that makes the most sense for their organization. However, it is recommended that local governments always include plenty of time for discussion about assessment results. **The discussion is the most valuable part of the exercise.** Local governments may also find it helpful to have an outside asset management expert facilitate the discussion. Involving an objective third-party can help ensure that issues are discussed fairly and comprehensively.

How can the assessment results be used?

Completing AssetSMART is an important first step in developing an asset management strategy. Next steps include:

Prioritizing gaps
For most local governments, it will not be reasonable to expect to build capacity in all areas at once. Local governments will need to choose which capacity gaps to address first. Some capacity gaps will be more significant than others. This will all depend on the local government's unique circumstances.

Developing implementation strategies
The next step will be to develop detailed implementation strategies to fill the most significant capacity gaps.

AssetSMART helps frame the discussion on prioritizing gaps and developing implementation plans, but it is does not provide pre-packaged solutions. Local governments will need to look carefully at their specific circumstances, evaluate available options, and decide for themselves the best way forward.

Glossary

ASSET

A physical component of a system that has value, enables services to be provided, and has an economic life of greater than 12 months.

ASSET MANAGEMENT

Systematic and coordinated activities and practices through which an organization manages its assets, their associated performance, risks and expenditures over their life cycles.

ASSET MANAGEMENT PLAN

Document specifying activities and resources, responsibilities and timescales for implementing the asset management program.

ASSET MANAGEMENT PROGRAM

A program to identify asset management needs, set up longer term financing means, and regularly schedule maintenance, rehabilitation and replacement works for the long term sustainability of the asset.

ASSET RENEWAL

Works to upgrade, refurbish or replace existing facilities with facilities of equivalent capacity or performance capability.

GIS

Geographic Information System.

INFRASTRUCTURE DEFICIT

A cumulative shortfall of required asset renewal.

LEVEL OF SERVICE

The defined quality for the provision of a particular service. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental acceptability, and cost.

LIFE CYCLE

The life of an asset, from the point when a need for it is first established, through its design, construction, acquisition, operation and any maintenance or renewal, to its disposal.

LIFE CYCLE COST

The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation, and disposal costs.

LOCAL GOVERNMENT

Municipalities and regional districts.

LONG-TERM FINANCIAL PLAN

Funds the long term investment plan.

LONG-TERM INVESTMENT PLAN

A long-term multi-asset renewal plan (e.g. 20 years).

MAINTENANCE

All actions necessary for retaining an asset as near as practicable to its original condition, but excluding rehabilitation or renewal.

ASSETS

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
1 Location	Accurate location data is available for fewer than half of the assets and is in a format or location that is generally inaccessible to those who need it.	Accurate location data is available for at least 50% of the assets.	Complete and accurate data is available for most assets, including all critical assets. Data is easily accessible to all who require it.	Complete and accurate data is available for all assets, including new assets. Data is easily accessible to all who require it.	Location data is available for most assets, however not all location data is easily accessible in the field including formal location data for assets with components (district energy utility, water, wastewater, and buildings).
2 Key Attribute Data	Accurate attribute data is available for fewer than half of the assets and is in a format or location that is generally inaccessible to those who need it.	Accurate attribute data is available for at least 50% of the assets.	Complete and accurate data is available for most assets, including all critical assets. Data is easily accessible to all who require it.	Complete and accurate data is available for all assets, including new assets. Data is easily accessible to all who require it.	Key attribute data including inventory and age is available and accessible by staff for most assets in most classes. However, condition and criticality data has not been recorded for most assets. Inventory has also not been formalized and key attributes have not been collected for componentized wastewater or district energy utility assets. Residents do not have online access to information, but options are being explored.
3 Install Data	The installation date is available for fewer than half of the assets and is in a format or location that is generally inaccessible to those who need it.	Asset installation date is available for at least 50% of the assets.	Accurate install date is available for most assets, including all critical assets. Data is easily accessible to all who require it.	Complete and accurate data is available for all assets, including new assets. Data is easily accessible to all who require it.	Age data is accessible where available. All new assets record install date as part of the data and financial management processes.
4 Historic Cost	Accurate historic cost data is available for fewer than half of the assets and is in a format or location that is generally inaccessible to those who need it.	Accurate historic cost data is available for at least 50% of the assets.	Complete and accurate historic cost data is available for most assets, including all critical assets. Data is easily accessible to all who require it.	Complete and accurate historic cost data is available for all assets, including new assets. Data is easily accessible to all who require it.	Historic cost is available for assets for the Finance Department, as part of the Tangible Capital Assets reporting requirements.
5 Natural Assets	No consideration is given to natural assets in planning for sustainable service delivery.	There is general awareness of the services provided by natural assets, but natural assets are not included in planning or decision making.	Some natural assets have been identified and the value of service is partially understood.	All significant natural assets have been identified and the value of service they provide is understood. This value is considered in decision making and planning.	Natural assets have been defined and located, are a part of the Town's inventory, budgeting, and asset management planning processes. Their intrinsic value is understood, however the accounting has not been formalized. The Town is continually looking for further opportunities for natural asset planning.

INFORMATION

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
6 Policy	No policies are in place related to sustainable service delivery.	Some policies related to sustainable service delivery are in place, but there are significant gaps or policies are not actionable.	Good policies are in place related to sustainable service delivery, but they are not all referenced for decision making.	Policy(ies) adopted by council that are understood and provide clear direction on how the community will achieve sustainable service delivery. Policies are a regular reference for guiding decisions.	An asset management policy and some infrastructure policies have been adopted and are in place. Gaps in operating policies will be identified during a consultant review in 2019.
7 Strategy	No strategy is in place.	Components of a strategy or framework are in place, but there are significant gaps in providing direction for sustainable service delivery and the linkage of plans and initiatives.	A strategy / framework is in place that identifies specific sustainable service delivery goals, the approach to achieving them, and identifies how organizational plans or initiatives fit together to inform decision making and achieving the goals. The strategy is not being widely implemented.	A strategy / framework is in place that identifies specific sustainable service delivery goals, the approach to achieving them, and identifies how organizational plans or initiatives fit together to inform decision making and achieving the goals. The strategy is being implemented.	Asset management processes follow the AMBC framework of Plan, Implement, and Review. An organization strategy to identify specific delivery goals will be completed when asset management plans are in place. The program framework is outlined in the strategic plan including initiatives and goals.
8 Level of Service	The levels of service currently delivered are not consistently understood by the public or documented.	In some of the core service areas, the current level of service is understood and documented, and the desired level of service has been defined.	In all service areas, the current level of service is understood and documented, and service targets have been set.	Current and desired levels of service, and trade offs between costs and services are well understood by both staff and the public.	Levels of service for asset classes have been identified by staff at a high level for the asset highlight sheets. More detailed levels of service information for some core service areas is documented in the Integrated Stormwater Management Plan and Water Quality Policy.

INFORMATION

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
9 Risk	Risks to assets and service levels are not understood or documented	Asset risk is estimated according to asset remaining life only, condition assessment information is not available. Broader service delivery risks have not been considered.	Estimated remaining life is known for all assets and is supported by a condition assessment for critical assets or assets nearing replacement. Risk assessments consider the consequence of failure. Some 'big-picture' risks to service delivery for the organization are understood at a corporate level.	Asset risks are well understood and documented based on evidence of the probability and the consequence of failure. High-level organizational risks to service delivery are well understood throughout the corporation.	Condition information from the field has been collected for some assets. However, most of the core infrastructure is still analyzed based on age. Some high level risks to service delivery is understood and documented in the asset class highlight sheets.
10 AMP - Asset Replacement Plans	No Asset Replacement Plan exists to show the theoretical timing for asset replacement.	Parts of an Asset Replacement Plan exist (e.g. for some asset categories, for a duration <20 years, etc.) but it is not consolidated into an organizational long term view.	An Asset Replacement Plan has been developed, but it is either <20 years in scope or does not include all assets.	A long term (75+ year) plan is in place that illustrates the timing of expenditure to replace all existing assets, the current infrastructure deficit, and the average annual sustainable funding level.	Asset replacements are based on various studies and long term analyses, or is age-based. Water strategy, pavement assessment, and fleet replacement plans are informally in place. However, these plans are not consolidated and there are still some significant information gaps in other asset classes.
11 AMP - Long Term Capital Plan	No long term (10 year) capital plan is in place.	A ten year capital plan is in place but it is limited to new projects and it does not reflect anticipated asset renewal.	A ten year capital plan is in place that reflects new capital projects for growth or regulatory compliance, and the replacement of existing assets to manage risk and deliver an appropriate level of service.	A ten year capital plan is in place that is current, informed by level of service targets, risk to service delivery. The capital plan is integrated with the long term financial plan, and is being followed and tracked.	A 5 year capital plan is produced by council annually, but does not only reflect new projects and includes replacement of existing aging infrastructure.

INFORMATION

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
12 Climate Change	Climate change is not considered in service delivery risk or long term asset replacements.	Probable local impacts of climate change have been identified and are considered in some organizational plans.	An assessment of risk to some critical existing infrastructure has been conducted. Design and construction of new assets consider climate change.	An assessment of risk to existing infrastructure has been conducted, and plans are in place to manage this risk. Design and construction of new assets consider climate change.	The Integrated Stormwater Management Plan projections for design, groundwater monitoring and aquifer mapping projections for water use, water strategy, foreshore review, and other key documents all consider the impacts of climate change on infrastructure.

FINANCES

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
13 Long Term Financial Plan	No long term financial plan is in place.	A financial plan is in place but it covers <10 years or does not reflect the future costs of replacing existing assets.	A long term (10+ years) financial plan is in place that reflects the revenue required and funding sources to fund new asse and asset replacements, but the plan is not being followed or updated.	A comprehensive long term financial plan exists and is based on up to date information. The plan looks forward 10 years or more and is integrated with long term capital plan. The plan is being tracked and followed.	A formal funding, budgeting process, and financial plan is in place for 5 year projections. This is tracked and updated annually. Water and sewer rate reviews have 5 and 100 year projections that reflect funding and required replacements.
14 Revenue	Revenue is year to year and there is no linkage between revenues and long term requirements. Revenues are not sufficient to meet needs without reliance on grants or subsidies.	Revenue is sufficient and reliable to fund the requirements for the next 5 years, but there is a significant gap between revenues and sustainable funding levels for later years.	Revenue is sufficient and reliable to fund the requirements in the 10 year capital plan, but there is still a gap between revenues and sustainable funding levels for the long term.	Revenues are sufficient, predictable, and stable to fund long term sustainable service delivery in alignment with the long term financial plan and the asset replacement plan.	Council's 5 year capital plans budget funding for infrastructure requirements. However, plans often rely on grants of subsidies including Gas Tax and the Small Communities Fund.
15 Reserves	No reserves are in place.	Minimal reserves are in place that can buffer short term fluctuations in revenue (e.g. 6 weeks operating expenses).	Reserves are in place to buffer short term revenue fluctuations. There are dedicated reserves for future capital renewal, but do not meet the levels required as identified in the financial plan.	Reserves are held at levels established in accordance with the financial plan in order to meet long term requirements.	Operative reserves are in place, Long term capital reserves for water and sanitary are in progress.
16 Debt	Debt levels are high (at or very near the maximum), limiting capacity for additional borrowing and no plan is in place to reduce debt.	Debt levels higher than desired and debt management strategy is being considered.	Debt levels are reasonable but is trending upward and are not aligned with the long term financial plan.	Debt levels are prudent and reasonable. Debt levels are in line with the long term financial plan and relatively stable.	There is no formal debt management strategy. Staff will be discussing Council's comfort with debt in the coming months.

URBAN systems

PEOPLE

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
17 People Capacity	Staff have no time for asset management.	Some staff time could be made available for asset management, but staff have limited or no knowledge of the tasks and processes required to meet asset management outcomes.	Staff are investing some time in asset management and are working to build the capacities, knowledge, and systems needed.	Staff have the necessary time, knowledge, skills, and capacities to achieve asset management outcomes and are implementing asset management as part of their jobs.	Town of Gibsons has a dedicated Asset Management Coordinator, an asset management team that meets quarterly, and implementation of the program involves each department and all staff levels.
18 Awareness	There is no awareness of the needs to manage assets and sustainably deliver services among staff, elected officials, or members of the public.	Staff are generally aware of the major issues related to Asset Management and service sustainability in the community, and what is needed to address these issues.	Staff members and elected officials are aware of community issues and future risks related to sustainable service delivery.	Members of the public are aware of the issues related to sustainable service delivery, and there is evidence these issues are considered in public decision making.	Staff are aware of asset management. Ongoing informal sessions for elected officials discuss sustainable service delivery, asset management, and their role in addressing the issue.
19 Teamwork	No cross functional team is in place to manage assets. There are significant siloes in the organization that prevent information from being shared and used in decision making.	A cross functional team is in place, but siloes among departments or staff positions (e.g. between operations and management) still prevent information from being shared.	A cross functional team is in place that is effectively bridging siloes in the organization.	There is no perception of siloes across departments at all levels of the organization. There is a strong culture of teamwork and information is readily and consistently shared through formal and informal channels.	The asset management team includes managers and staff from public works, parks, infrastructure services, and finance. Information is being transferred across departments at all levels of the organization and there is a culture of teamwork overall.
20 Role	People do not understand their role in asset management or sustainable service delivery which hinders the ability to manage assets.	A small group of people understand their role as it relates to sustainable service delivery, but there are some significant gaps causing things to fall through the cracks.	Most people in the organization understand their role as it relates to sustainable service delivery.	Roles are clearly understood by everyone, including council, resulting in nothing 'falling through the cracks'.	

URBAN systems

	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	EVIDENCE / NOTES
21 Decision Making	Decisions are made based on a short term frame or reactive in nature and in isolation of appropriate information.	Decision making based on a long term frame, but are informed only by incomplete or anecdotal information.	Decision making is based on the long term and incorporates appropriate information.	Decision making about assets and service delivery is informed with appropriate and timely information, is transparent, and is aligned with community priorities and long-term sustainable service delivery.	Data is being collected to help inform organization decisions.

Appendix D: Asset Class Quick Guides (Final Draft)

Quick Guide to Our Engineered & Natural Assets

SETTING THE PARAMETERS FOR SUSTAINABLE ASSET MANAGEMENT

1. What do we have?
2. What is it worth?
3. How do we take care of it?
4. How much does cost to take care of it?
5. How long will it last?
6. How do we plan to replace it and can we afford it?

Asset Management Framework

Quick Guide to Our Engineered & Natural Assets

WHAT IS ASSET MANAGEMENT?

The goal of asset management is to ensure cost-effective and environmentally responsible service provision for present and future citizens through the creation, acquisition, maintenance, operation, rehabilitation and disposal of each asset.

A key issue facing local governments across Canada is managing aging assets and resources effectively while maintaining acceptable levels of service.

To help achieve this goal, the Town of Gibsons employs a formalized asset management program.

Our asset management team has divided the Town's assets into eight classes: Sanitary, Water, Stormwater, Transportation, Gibsons District Energy Utility, Fleet and Equipment, Parks and Civic Lands, and Buildings and Structures.

Staff is currently developing an asset management plan for each of the eight asset classes, which will help decision-makers address unique levels of services, future demands, lifecycle management, finances, improvements and monitoring.

COMMUNITY GOALS

Community goals for each asset primarily come from the Official Community Plan, which summarizes the Town's focuses, priorities and goals.

Stakeholder requirements and expectations also arise from conversations between staff, Council and the public.

Council considers staff recommendations as well as public concerns to make important "levels of service" decisions.

FINANCIAL SUSTAINABILITY

While funding requirements for operational and maintenance needs at **existing** levels of service are in place, establishing sufficient and reliable funding for asset **renewal and replacement** is a challenge many municipalities are grappling with.

In addition to looking for efficiencies in operations and renewal programs, mechanisms that support sustainable funding include: appropriate rate setting, suitable reserve levels, strategic use of debt and reduced reliance on grant funding.

LEVELS OF SERVICE

A common dilemma of local government is that the community wants increased services, with little or no rate increases.

Accordingly, a key challenge is to clearly define and articulate various "levels of service" and their associated costs, so that the community can make informed decisions on the levels of service they receive and are prepared to pay for.

Additionally, it is easy to focus on delivering new infrastructure (i.e. increasing levels of service) while overlooking the renewal requirements of existing infrastructure (i.e. maintaining existing levels of service.)

The challenge is to define meaningful levels of service that meet the community's expectations, and from which informed, sustainable budget decisions can be made.

SANITARY COLLECTION & TREATMENT

AT A GLANCE

Gibsons' Sanitary Collection & Treatment System is comprised of:

- Wastewater Treatment Plant (WWTP)
- Treated sewage ocean outfall
- Prowse Road Lift Station
- 35 km collection pipes, including gravity and force mains
- 500 manholes
- Approximately 1700 service connections

COMMUNITY GOALS

- upgrade and expand the system for increased reliability and to meet growing demand
- upgrade the effluent outfall and outfall facility
- require existing development to connect to the system
- minimize "inflow and infiltration"
- divert flow away from Prowse Road Lift Station
- pursue funding options for Prowse Road Lift Station

RELIABILITY AND RISKS

Reliable service requires:

- regular monitoring and preventative maintenance
- communications to the public re) their role in caring for the system

Risks of cutting costs are:

- expensive reactive maintenance to fix leaks, breaks and blockages
- disruptions to service
- risk of sewage backups and resulting property damage
- increased treatment costs

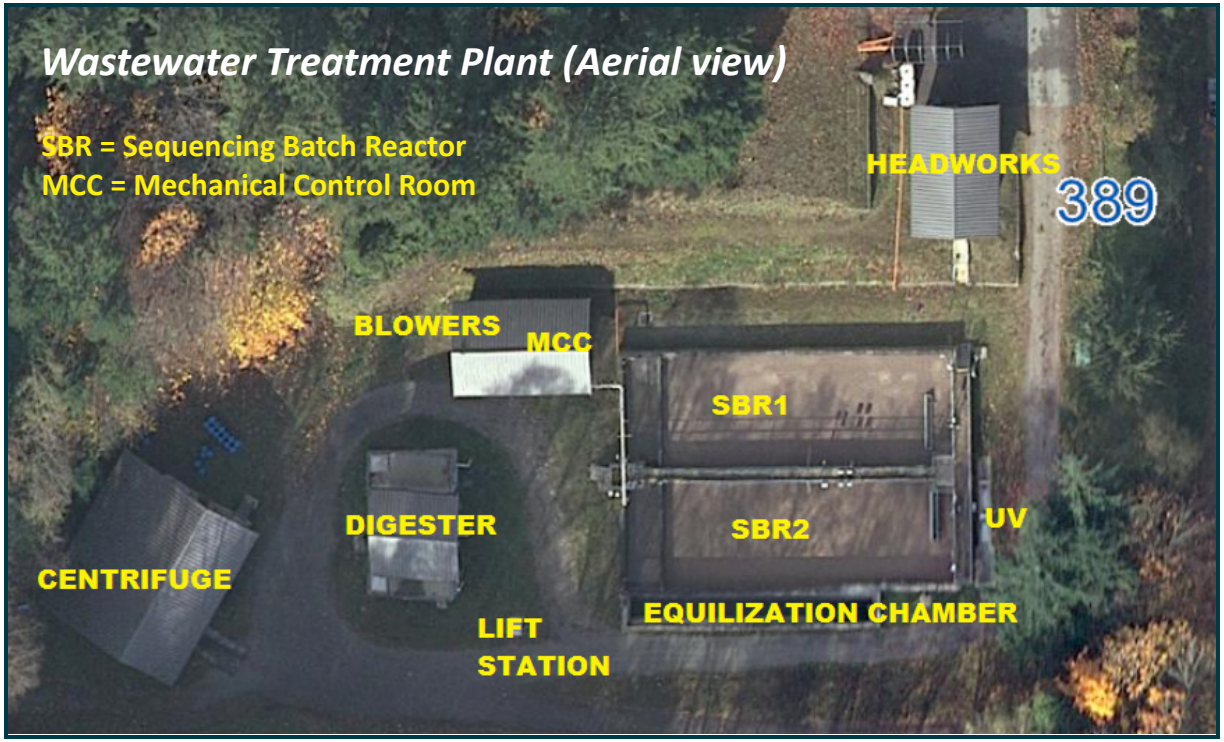
Inflow and Infiltration ("I&I")

Inflow & Infiltration is clean storm and/or groundwater that enters the sewer system through cracked pipes, leaky manholes, or improperly connected storm drains, down spouts and sump pumps.

Most inflow comes from storm water and most infiltration comes from groundwater.

I&I puts additional pressure on Gibson's sanitary collection system, as we end up unnecessarily treating clean water.

To help alleviate costs associated with I&I, the Town employs a video monitoring program to identify where unwanted water is getting into our system.



ASSET MANAGEMENT

Replacement Value

$49.0 million (or $10,600 per person)

Operations & Maintenance

Ongoing videoing and flushing of critical mains, scheduled maintenance of wastewater treatment plant. Operating the treatment plant requires three full-time staff.

Current & Planned Capital Projects

2018

- Prowse Road Lift Station - Design: $60,000
- WWTP Optimization & Upgrade - Design and Tender: $396,000

2019

- Prowse Road Lift Station - Construction: $995,500
- WWTP Optimization & Upgrade - Construction: $1.7 million
- Annual Collection System Rehabilitation: $55,100

2020

- Collection System Rehabilitation: $57,900
- Wastewater Strategic Plan Update: $55,100

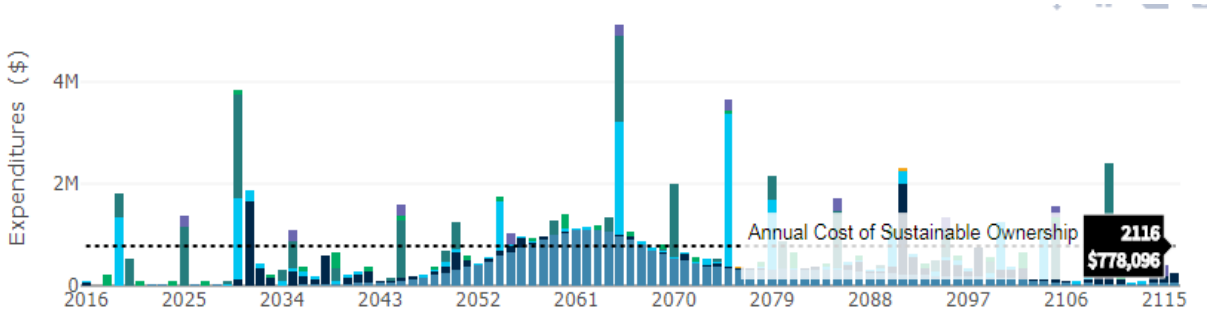
2021

- Collection System Rehabilitation: $60,800

2022

- Collection System Rehabilitation: $63,800

REPLACEMENT SCHEDULE



A sustainable sanitary system is estimated to cost $778k annually just to replace aging infrastructure.

WWTP Upgrade & Prowse Pump Station Retrofit

The contract to provide design, engineering and construction services for Gibson's Wastewater Treatment Plant was awarded in 2018.

Project work is to include construction of a buffer tank, a chemical addition building and a chemical delivery system, as well as an upgrade to the Prowse Road Lift Station.

Design of the upgrades began in 2018, with construction anticipated in 2019 and 2020.

Fats, Oils, Grease (FOG)

An annual flushing and monitoring program has revealed issues with preventable blockages, such as grease build up due to lack of grease inter-ceptor control. In response, the Town has implemented a multi-pronged communications and inspection program aimed at both commercial and residential addresses.

ENGINEERED WATER

AT A GLANCE

Engineered water assets are infrastructure assets that are designed, built, operated and maintained to reliably provide clean water to our homes.

Assets include:

- 2 reservoirs
- 4 water supply wells
- 38 km of pipe
- 1 pump station
- 170 hydrants
- 1700 metered service connections

Residential water meter installation commenced in 2009 to help distribute the total costs associated with our water infrastructure more fairly.

Meters also help identify leaks, which has had a positive impact on overall consumption. In 2014, the Town commenced an annual rate review to ensure adequate finances were in place to operate and maintain the water system, as well as replace aging infrastructure.

Since implementing these measures, daily water consumption has fallen from an average of 800 litres per person to 350 litres per person (including business use, operations, and system losses.)

Typical residential use is approximately 200 litres per day.

COMMUNITY GOALS

- Be proactive by maintaining and monitoring water quality and system capacity
- Plan for future growth by pursuing upgrades and expansion
- Preserve and conserve water supply through:
  - Education
  - Water restrictions
  - Incentive programs
  - Water metering
- Continue relationship with SCRD regarding water management
- Meet or exceed legislative requirements from Vancouver Coastal Health

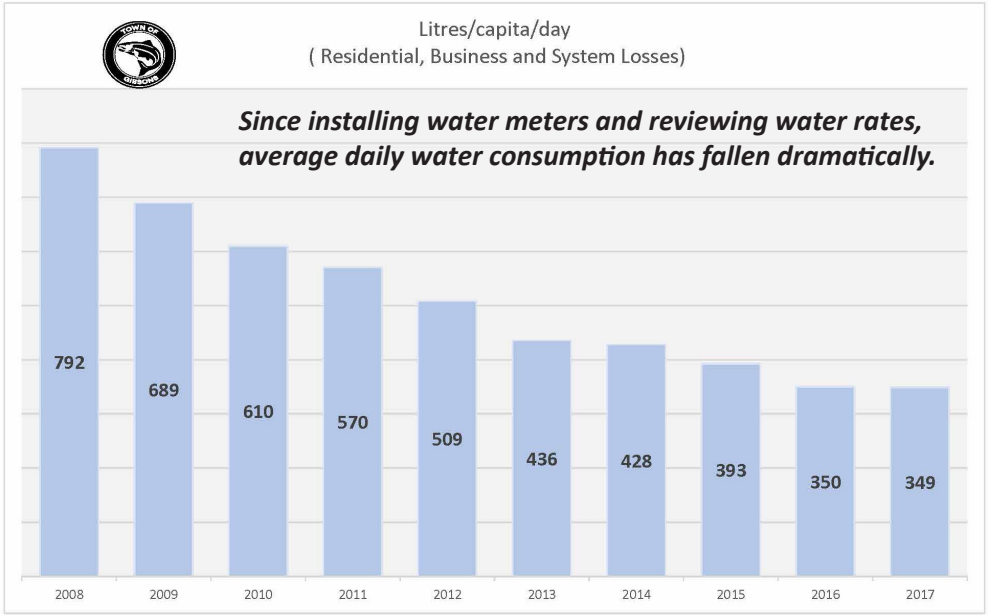
RELIABILITY AND RISKS

Reliable service requires:

- Regular water main replacements
- Water conservation & protection
- Adequate staffing for regular ongoing maintenance

Risks of cutting costs are:

- Costly water main breaks and service disruptions
- Poor water quality



ASSET MANAGEMENT

Replacement Value

$35.0 million or $7600 per person

Water rates are reviewed annually to reflect ongoing operations, maintenance and future replacement and capital costs.

Operations & Maintenance

Unidirectional flushing, valve exercising, blow-off valve rehabilitation, consultant flushing program update, hydrant inspections, and chlorination

Long-term Financial Plan

Goal: to achieve a self-sustaining water fund with sufficient reserves to address short and long-term operational and capital requirements.

Reserves Targets:

Operational Reserve with contingency:
30% of annual O&M expenses

Rate Stabilization:
10% of sale of annual parcel taxes and user fees

Capital Reserve:
3% of total asset replacement value

Current & Planned Capital Projects

2018

- Watermain replacement Gibsons Way: $669,000

2019

- Watermain replacement: $455,400

2020

- Watermain replacement: $303,900

2021

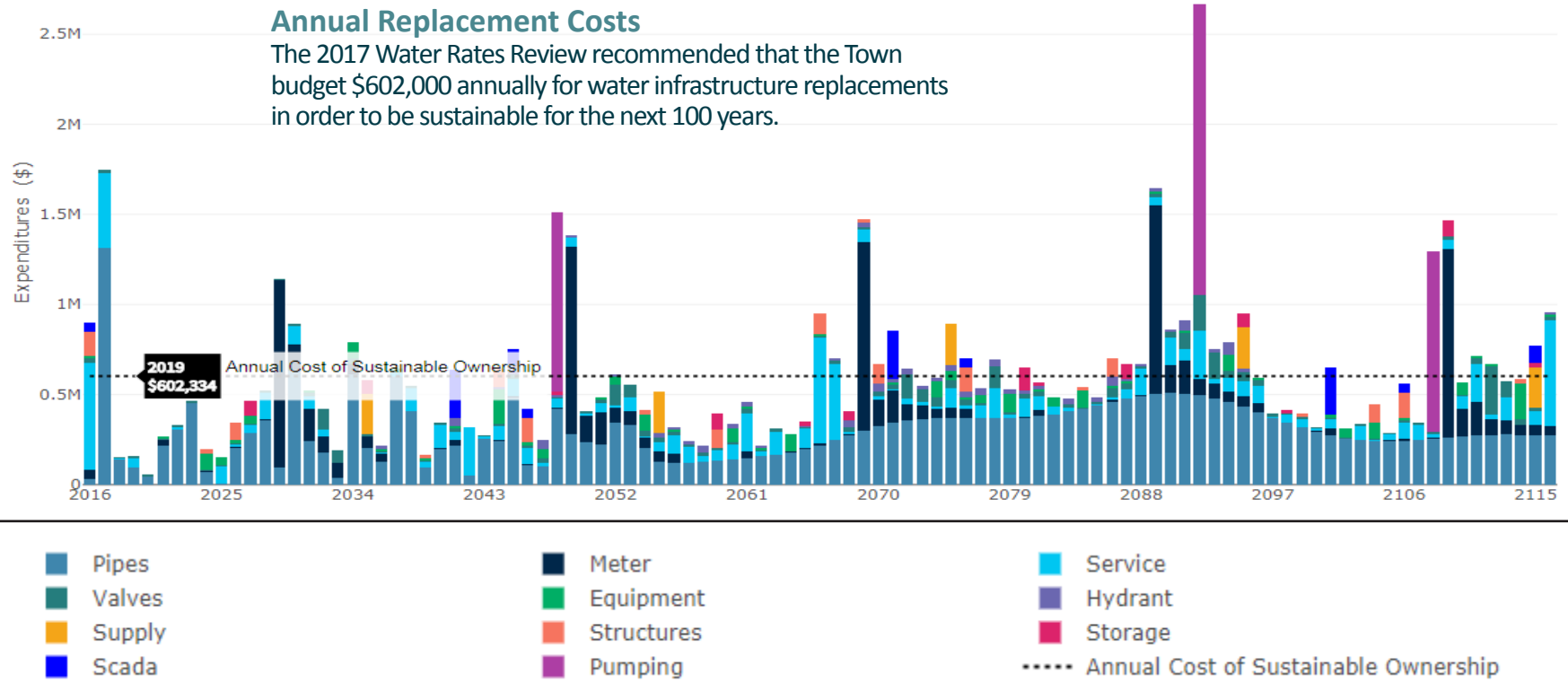
- Watermain replacement: $319,100

2022

- Watermain replacement: $335,000

Annual Replacement Costs

The 2017 Water Rates Review recommended that the Town budget $602,000 annually for water infrastructure replacements in order to be sustainable for the next 100 years.



THE GIBSONS AQUIFER

AT A GLANCE

- The aquifer is considered a "natural asset" which provides a municipal service in the same way that engineered assets do
- 75% of the Town's water currently provided by the aquifer; 25% supplied by SCRD from Chapman Creek.
- The aquifer is gravel and sand that is saturated by water (not an underground lake or river).
- It takes about 10 years for a drop of water that falls on Mt Elphinstone to enter the aquifer and make its way to Town wells.

COMMUNITY GOALS

- Maintain groundwater monitoring program
- Protect groundwater and aquifer
- Map significant recharge areas
- Watershed planning
- Ensure water sustainability
- Manage demand

RELIABILITY AND RISKS

Reliable service requires:

- annual monitoring
- maintaining "cross-connection control program" to prevent contamination
- consistent communications re) water's value and the importance of conserving and protecting it
- metering to track leaks and usage

Risks of cutting costs are:

- damage to/pollution of the aquifer
- more frequent water restrictions
- inability to respond to changing aquifer conditions

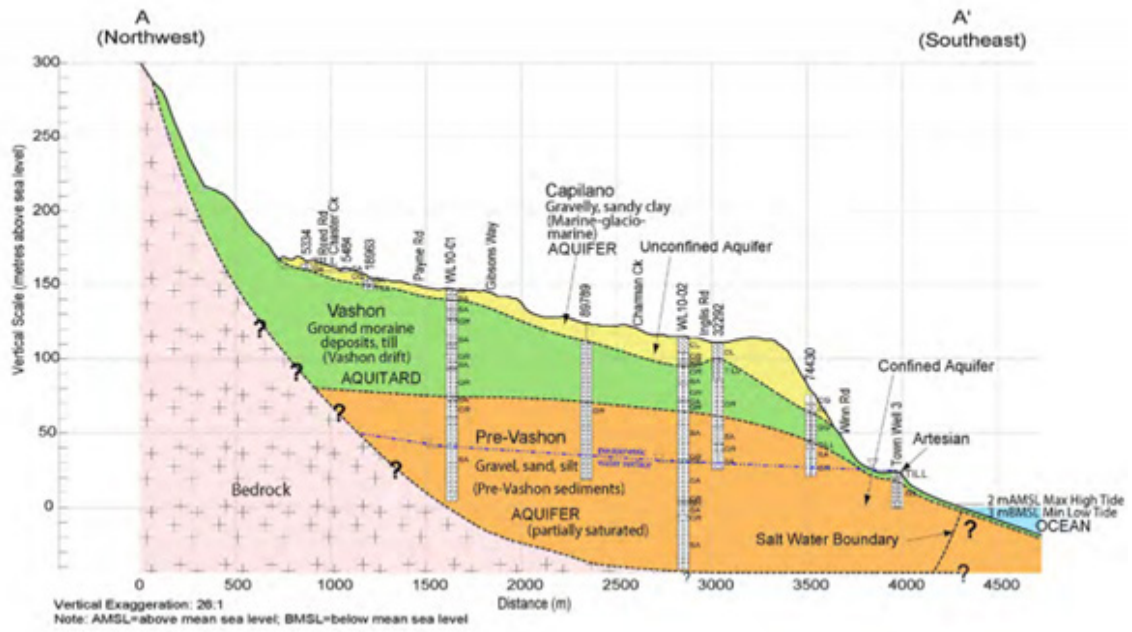
Connecting Zone 3 to the Gibsons Aquifer

Currently, residents who live in the Town's "Zone 3" area (i.e. most of Upper Gibsons) are served by the SCRD's Chapman Creek water supply.

To help reduce the water usage at Chapman Creek, the Town has proposed connecting Zone 3 to the Gibsons Aquifer. This would require an investment of approximately $2 million and would reduce Gibsons' use of SCRD water by 95% - 98%.

On completion of this initiative, the Town would continue to be reliant on the SCRD for peak hour demand, emergency storage and fire flow. This initiative has been made possible by the reduced water use by metering.

The Gibsons Aquifer - Cross-Section



ASSET MANAGEMENT

The cost to build, operate and maintain an equivalent engineered asset has not been determined, but any option would be prohibitively expensive.

Operations & Maintenance

Groundwater Monitoring Program
$28,000 annually

Gathers detailed information about the long-term effects of variables such as user demand, climate change, and sea level rise on the aquifer's total capacity. Current data helps us respond quickly to changing conditions and make well-informed decisions about the aquifer, our water usage and our future buildout.

Current & Planned Capital Projects

2018
- Well #3 Generator: $65,000
- Well Inspection #2 & #3: $63,700
- Additional Monitoring Wells: $133,000
- Zone 3 Water Supply Design: $175,000

2019
- Zone 3 Pump Station: $787,500

2020
- Zone 3 Well: $826,900

Other initiatives, such as the scheduled replacement of the Town's watermains, help reduce water consumption from the Aquifer.

PROTECTING THE AQUIFER

In Gibsons, we have been blessed with favorable access to the Gibsons Aquifer, a pure groundwater resource which currently provides potable water to almost 75% of the Town. It's a pristine, award-winning and irreplaceable natural asset and we take our stewardship of it very seriously. Some of the initiatives we have undertaken to protect our water resource include:

AQUIFER MAPPING STUDY
Commissioned in 2009, at a total cost of $500,000, this four-year, comprehensive, science-based water-strategy document has become a key resource for any person contemplating projects that might impact the aquifer, from the Town's planners to the province's environmental officers. Additionally, the Town has implemented several of the recommendations made in the Mapping Study, including:

CREATION OF DEVELOPMENT PERMIT AREA 9 IN TOWN'S OFFICIAL COMMUNITY PLAN
Strict regulations and a permitting process is required for excavation and drilling, as well as for development with the potential for contamination.

BYLAW UPDATES
Revision of Town's Water Regulation Bylaw, with a section dedicated to the protection of the Gibsons Aquifer; Zoning bylaw (no drilling for water permitted); DCC Bylaw (includes cost of using natural assets, recommended inclusion of monitoring wells).

WELL INSPECTION PROGRAM
Commenced in 2016, includes regular inspection of all Town supply wells.

ADOPTION OF WATER USE AND CONSERVATION POLICY
This Council-adopted policy provides Council's objectives around appropriate water use, goals for water use reduction and ensuring continued excellent water quality.

ANNUAL GROUNDWATER MONITORING PROGRAM
Commenced in 2009, the Town has a network of monitoring wells that are sampled in an annual program which monitors chemistry and minerals in the Aquifer, as well as water levels and pressure. This info is compared to the predictions in the Mapping Study, to ensure the health of the Aquifer.

ANNUAL WATERMAIN REPLACEMENT PROGRAM
Risk-based annual watermain replacement program reduces system leakage and impact to the aquifer.

CROSS CONNECTION CONTROL PROGRAM
Protects the Town's drinking water from contaminants.

UNIVERSAL WATER METERING
Used to track water usage and locate leaks. (Refer to *Engineered Water Assets* Fact Sheet for more details.)

DRAINAGE

AT A GLANCE

Stormwater can pose a large risk to all infrastructure if it is not properly managed. To help protect life and property, the Town owns and operates engineered and natural assets, including:

- 20 km of drainage pipe
- 300 manholes
- 600 catch basins
- Culverts
- Ditches

Natural Assets for stormwater management include:

- 3 ponds (White Tower (2), Parkland)
- 6 km of creeks (Goosebird, Charman and Chaster)

Our Drainage Infrastructure Policy and Integrated Storm Management Plan (ISMP) helps to outline priorities and guide staff decision-making.

Valuation of Whitetower Park

In 2017, the David Suzuki Foundation measured the hydrological and ecological functions performed by Gibsons' creeks and woodlands. They determined that the Whitetower Park ponds have a value of $3.5 to $4.0 million in terms of the stormwater management services they deliver. Accordingly, the Town's Development Cost Charges (DCC) Bylaw was expanded to include this pond system. Gibsons' DCC Bylaw requires developers to contribute to the improvement of, and in some cases, the rehabilitation of, the Town's natural assets, as well as upgrades to engineered infrastructure.

COMMUNITY GOALS

- Developers must provide overall drainage plan which:
  1. ensures there is no increase in runoff due to their development
  2. manages and reduces runoff
  3. limits impervious areas
- Consider long-term viability of privately owned stormwater management structures
- Support greening of existing paved surfaces to promote permeability
- Be mindful of downslope effects of infiltration

RELIABILITY AND RISKS

The Town is currently monitoring the engineered stormwater assets through an annual video program to capture data, identify repairs, evaluate risks and make informed replacement decisions.

Reliable service requires:

- Regular monitoring
- Preventative maintenance

Risks of cutting costs are:

- Costly reactive maintenance
- Property damage from blockages

ASSET MANAGEMENT

Operations & Maintenance

Annual videoing, flushing and monitoring program; manhole inspections; catch basin cleaning; creek cleaning

Current & Planned Capital Projects

2018

- Gibsons Way culverts & ditch (North Road to Bals): $132,000
- ISMP completion: $181,000
- Annual drainage improvements: $10,000

2019

- Annual drainage improvements: $45,000
- Whitetower Pond upgrade: $662,000

2020

- Annual drainage improvements: $47,000
- Charman Creek Naturalization: $70,000

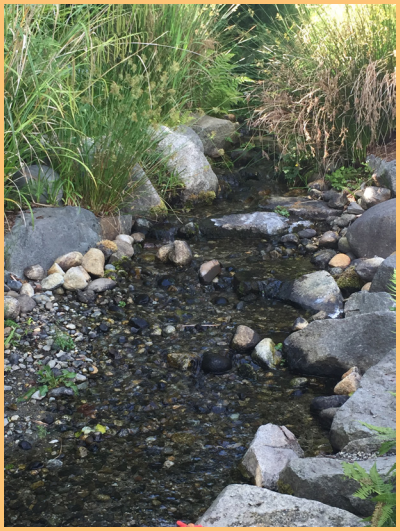
2021

- Annual drainage improvements: $49,000
- Foreshore Improvements: $569,000

2022

- Annual drainage improvements: $52,000
- Charman Creek Naturalization: $430,000

Integrated Stormwater Management Plan (ISMP)



In essence, an Integrated Stormwater Management Plan is a document that sets out how to manage rainwater runoff in order to protect people, natural and built assets.

Gibsons' first ISMP was developed in 2010, with a new update just completed. The new document draws heavily on the Town's natural asset management philosophy, and relies on a chain of both natural assets and constructed assets that mimic natural features to address the Town's stormwater needs.

In 2017, the Town successfully applied for and was awarded a $249,000 grant from the Clean Water and Wastewater Fund, under which the Canadian and BC governments are investing up to $373.6 million to support infrastructure projects in communities across the province. The grant amount covered about 85% of the $300,000 in ISMP project costs.

The ISMP Update and Implementation Project comprises seven elements:

- the ISMP update;
- Whitetower pond design;
- Brothers Park stormwater retention design;
- Charman Creek plan;
- improvements to Goosebird Creek within Labonte Park to reduce flooding and improve natural habitat;
- permitting updates; and
- bylaw updates.

Bylaw changes recommended in the updated ISMP will be considered by Council in 2019.

TRANSPORTATION

AT A GLANCE

The Town owns and operates:

- 27.2 km of paved road
- 1.1 km of chip sealed road
- 2 km unpaved road
- 17 km sidewalk
- Multi-use paths (Gibsons Way + seawalk)
- Trails
- Bike lanes
- Street lighting, signage

In 2015, the Town of Gibsons conducted an analysis of the surface conditions of its roads.

At the time of its analysis, Gibsons' road network had a condition of 11.3% All Fatigue Cracked Area (AFCA), which is considered poor when compared to other networks in BC.

It was also determined that an annual budget level of $425,000 was required to maintain the road network in its existing condition, while increasing the annual budget to $550,000 would improve the network condition.

The Town's annual road maintenance budget is currently approximately $300,000.

COMMUNITY GOALS

- Improve traffic flow
- Consider streetscape improvements
- Upgrade certain roads for traffic and pedestrian safety
- Ensure road designs:
  1. are easily maintained
  2. are cost-effective to build
  3. minimize environmental impact
  4. incorporate natural systems
  5. prioritize non-vehicular transportation
- Laning, speed, signage and pavement marking projects for particular streets and areas
- Review traffic-calming measures

RELIABILITY AND RISKS

Transportation service levels can vary by:

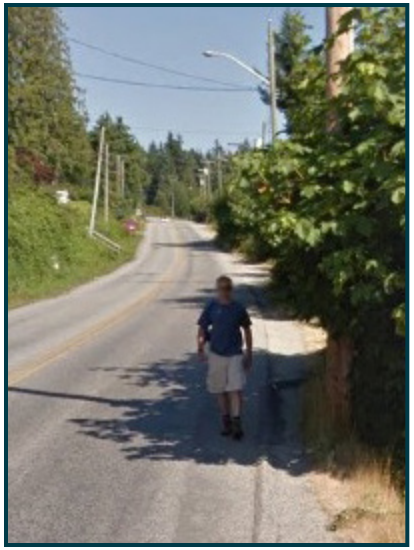
- Road surface type
- Accessories including curbing, sidewalks, parking or streetlights
- Level to which the roads are operated and maintained

Reliable service requires:

- Well designed and constructed roads
- Regular pavement patching
- Regular crack sealing
- Regular line painting

Risks of cutting costs are:

- Expensive fixes/eventual road re-construction
- Rough road surface conditions



Before: Gibsons Way (2013)

After: Gibsons Way (2018)

Gibsons Way Multi-Use Path

Built to accommodate both pedestrians and cyclists, this new pathway creates a safer, more gently sloping link between Upper and Lower Gibsons.

The Gibsons Way connector is a critical component of Gibson's expanding network of walking and biking trails that was first envisioned in 2001.

ASSET MANAGEMENT

Operations & Maintenance

Roads: crack-sealing, line painting, pothole repair, annual paving program, monthly trails inspection, annual sidewalk inspection (in accordance with Town policy).

Planned Capital Projects (Roads)

2018

- Gibsons Way Multi-Use Path/Paving: $1.6 million
- Pavement Rehabilitation: $75,000
- Pedestrian Connectivity Improvements: $5,000

2019

- Kiwanis Crosswalk: $24,000
- McCall Lane Grading/Drainage: $79,000
- Pavement Patching/Cracksealing: $42,000
- Pavement Rehabilitation: $290,000
- Pedestrian Connectivity Improvements: $11,000
- Sidewalk Rehabilitation: $11,000

2020

- Gibsons Way Eastbound Bike Lane (School Rd. to N. Fletcher): $604,000
- Pavement Patching/Cracksealing: $45,000
- Pavement Rehabilitation: $304,000
- Pedestrian Connectivity Improvements (Inglis - Charman Creek Crossing: $93,000

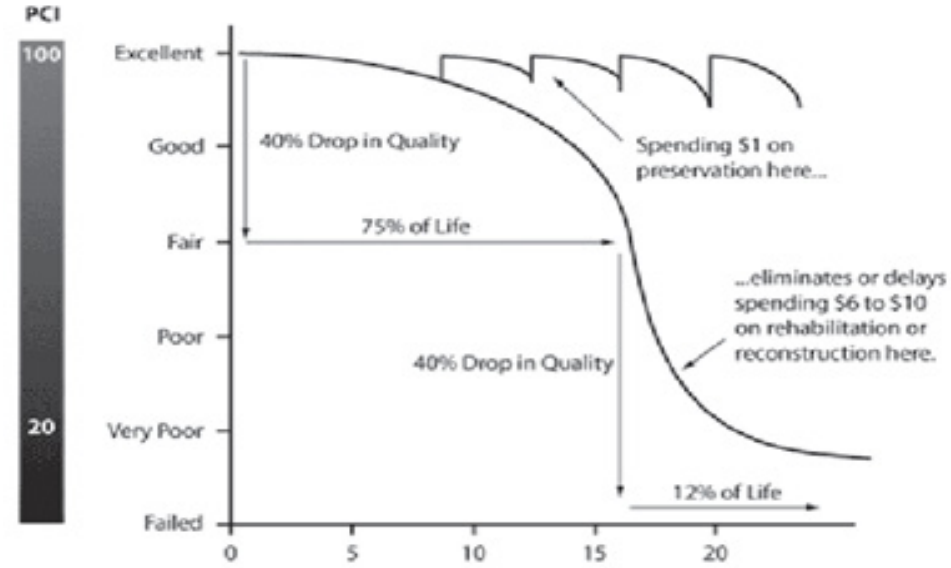
2021

- Pavement Patching/Cracksealing: $47,000
- Pavement Rehabilitation: $320,000

2022

- Pavement Patching/Cracksealing: $49,000
- Pavement Rehabilitation: $336,000

Pavement Life Cycle Cost and Condition Over Time



If a road isn't maintained through patching or crack sealing, it will start to deteriorate more quickly over time and eventual fixes will cost more. Regular maintenance enables road to be kept in good condition for less overall cost. This requires ongoing investment. Paved asphalt roads are estimated to last about 20 years, on average.

GIBSONS DISTRICT ENERGY UTILITY (GDEU)

AT A GLANCE

The GDEU is a geothermal utility system that harnesses heat from the earth to supply energy to Gibsons' RCMP station and to 58 homes in the Parkland subdivision in Upper Gibsons.

The Town built the GDEU in order to reduce Gibsons' carbon footprint, reduce energy costs for residents and businesses, and provide a stable source of revenue for the Town.

In connection with this system, the Town owns and operates:

- 1 pumphouse
- 3 energy fields (geo fields)
- 3.7 km of distribution piping and service connections

The Town's segment of the utility links to the private (resident-owned) segment of the system, which includes individual service lines and heat pumps.

GDEU rates are based on calculated heat loss for each home, with calculations provided to the Town by the builder.

COMMUNITY GOALS

- Business plan update
- Ongoing evaluation of options for future expansion

RELIABILITY AND RISKS

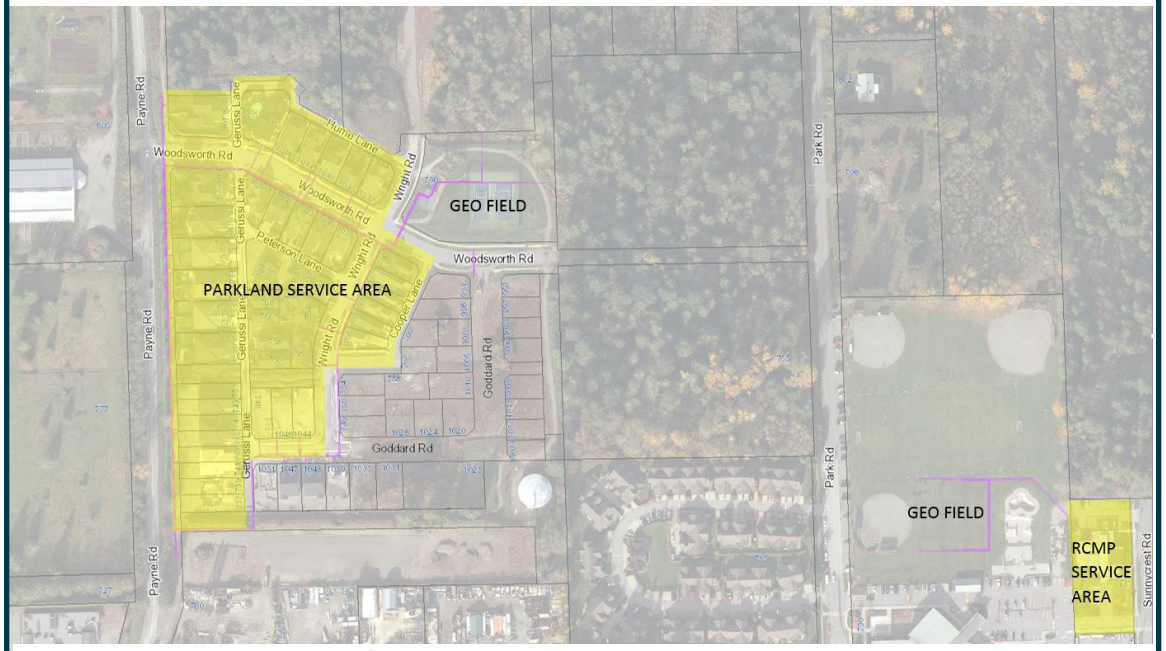
Reliable service requires:

- regular monitoring
- preventative maintenance
- adequate staffing

Risks of cutting costs are:

- interruptions to service due to leaks or breakages
- costly reactive maintenance
- delayed response time

District Energy Utility - Service Areas



Constructed in 2011, the geo field near the Parkland neighbourhood currently serves 58 homes. The RCMP Station (*bottom right*) is serviced by a smaller field. It was constructed in 2012.

ASSET MANAGEMENT

Historical costs* = $1,251,000
(Infrastructure installed from 2011 - 2017)
**total $ spent on infrastructure to date*

Operations & Maintenance

Currently, the GDEU is monitored and maintained by Town staff.

Current & Planned Capital Projects

2017

- Installation of 2 gas backup boilers, pump control refinements, system programming: $133,000

2018

- Strata service connection repairs: $12,000

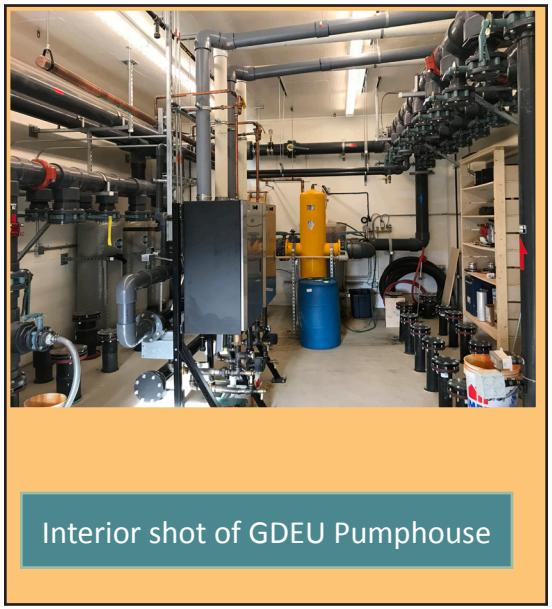
While initial plans called for more homes to be connected to the GDEU, the requirement for costly additional infrastructure, has made that plan undesirable in the short term.

Operations & Maintenance Overview

Improvements were made by the Town during 2017 and 2018 to ensure the GDEU will run as efficiently as possible; ongoing monitoring will provide the Town with the information to determine to what degree the efficiencies will steer future expansion of the system.

- Gas boilers were installed to provide a back up heat source for the system
- New pumps were installed which are able to pump fluid at a higher rate. This will translate to more efficient use of the heat around the fields.
- New pump controls allow better control of when pumps turn on and how many pumps are running at any given time. This should provide a savings on electricity use.
- A new monitoring program enables remote monitoring of the system and will enable better response to provide any changes to the system necessary to improve ongoing efficiencies.

Installing slinky in geo-fields



Interior shot of GDEU Pumphouse

FLEET AND EQUIPMENT

AT A GLANCE

The Town of Gibsons owns a fleet of vehicles and equipment used for transportation, infrastructure operations, maintenance and installations.

Fleet and Equipment is the first Town of Gibsons Asset Class to have a completed Asset Management plan, which includes an overview of levels of service, future demand, lifecycle management, risk management and financials.

COMMUNITY GOALS

- To be determined

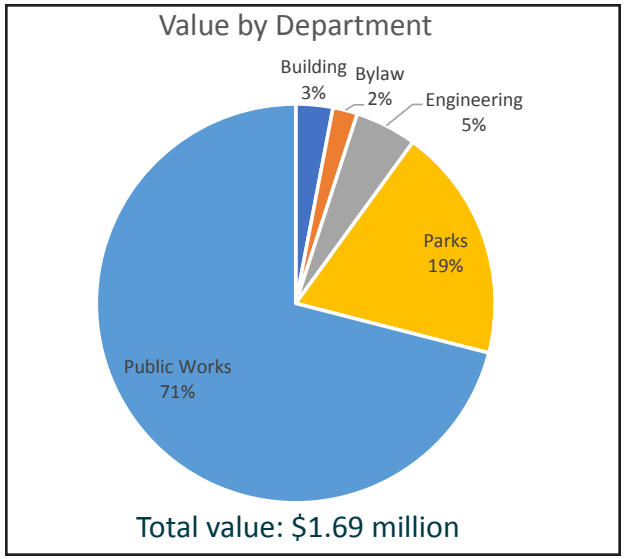
RELIABILITY AND RISKS

Reliable service requires:

- well-planned purchasing
- good preventative maintenance

Risks of cutting costs are:

- unsafe equipment
- unreliable equipment
- longer response times
- limited functionality of Town crew



One of the Town's most versatile vehicles is the vactor/flush truck, which helps our crews locate services, flush our sewers, excavate holes in tight spots and clean our drains.

ASSET MANAGEMENT

Operations & Maintenance

- Vehicles are maintained and inspected based on best practices for safety.
- $240,000 (annual cost to operate/maintain and replace fleet.)

Capital Projects

Planned Replacement of:

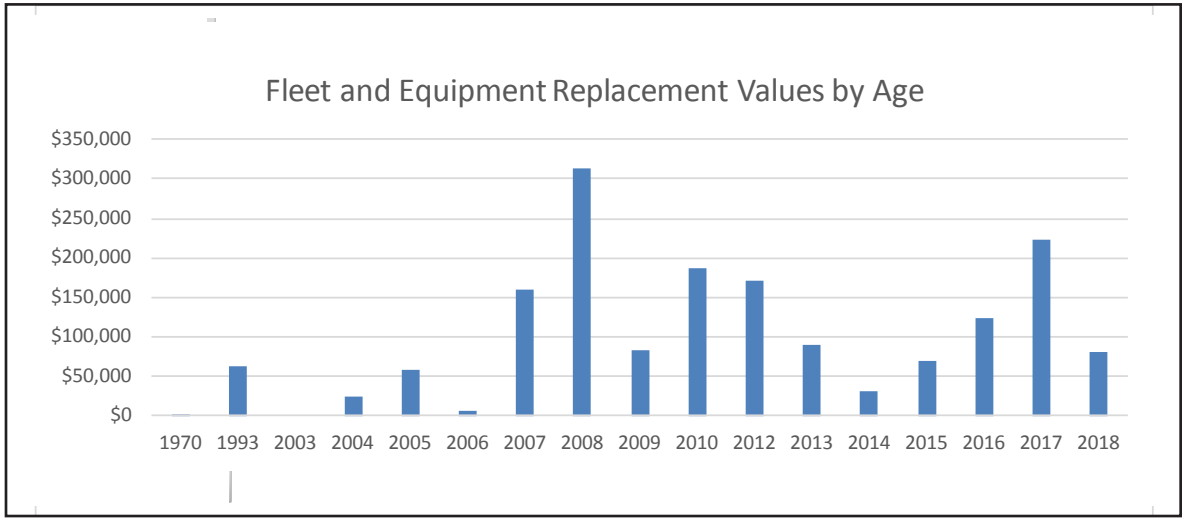
2018
- Electric Vehicle: $40,000 (Planning)
- Electric Vehicle: $40,000 (Infrastructure Services)

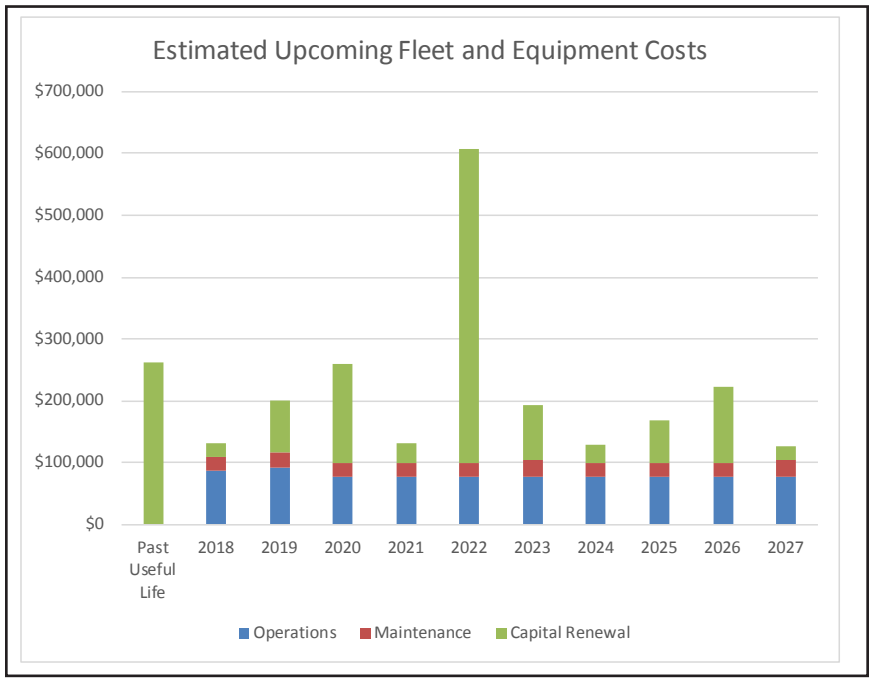
2019
- Ford F450 4x4 dumptruck: $87,000
- Two (2) snowblades: $28,000

2020
- Bobcat skid loader: $45,000
- Sterling Bullet dumptruck replace: $71,000
- Kubota tractor/mower: $28,000
- Angle broom 68”: $10,000
- Flail cutter/mower: $16,000
- Grader 7’: $10,000

2021
- Ford Escape Hybrid SUV: $50,000

2022
- Sterling Vactor/Flush Truck: $334,000
- John Deere 410TJ Backhoe: $194,000
- Ford F150 Supercab pickup: $35,000





With many vehicles purchased in 2008 (*see graph above*) and a policy to keep vehicles for 10 years, we are anticipating a spike in Fleet and Equipment costs in the next few years (*see graph at left*).

PARKS AND CIVIC LANDS

AT A GLANCE

With 7.47 hectares of parkland per thousand residents, Gibsons has well over the national average number of parks per capita.

Park assets include:

- 3 Community Parks
- 15 Neighbourhood Parks
- 2 Greenbelts
- Seawalk
- Tennis Courts
- Skate Park
- Benches
- Garbage Cans

Total parkland = 34.94 hectares

Civic lands include:

- Aquatic Centre/Curling Rink
- Charman Creek Lands
- Holland Lands & Civic Precinct*
- Public Works Yard

Total civic lands = 11.34 hectares

All residents live within a 10-minute walk of park space and most live within a 5-minute walk.

** Civic Precinct includes: Town Hall, Library, School District Building, Arts Building and Sunshine Coast Museum & Archives*

COMMUNITY GOALS

- Ensure that residents and visitors of all ages and abilities have access to a variety of parklands and open spaces, including forested lands
- Designate sufficient park and open space areas to meet the long-term requirements of the community as it grows and changes
- Create a system of linked parks and trails to provide opportunities for both active and passive outdoor uses

RELIABILITY AND RISKS

As the Town grows from the 2016 level of 4,605 residents, increased demand for services will mean heightened pressure for the effective management of the Town's green spaces.

It is critical to plan the parks system in concert with growth and development, in order to ensure that the high quality of life experienced in Gibsons today remains for generations to come.

View of Armours Beach, following 2018 rehabilitation

ASSET MANAGEMENT

Operations & Maintenance

- 5 full-time staff and 3 part-time Parks staff work to maintain the Town's 28 parks and civic properties, beach accesses, trails, playing fields, playgrounds, tennis courts and natural areas
- Est. Annual Maintenance Costs: $770,000

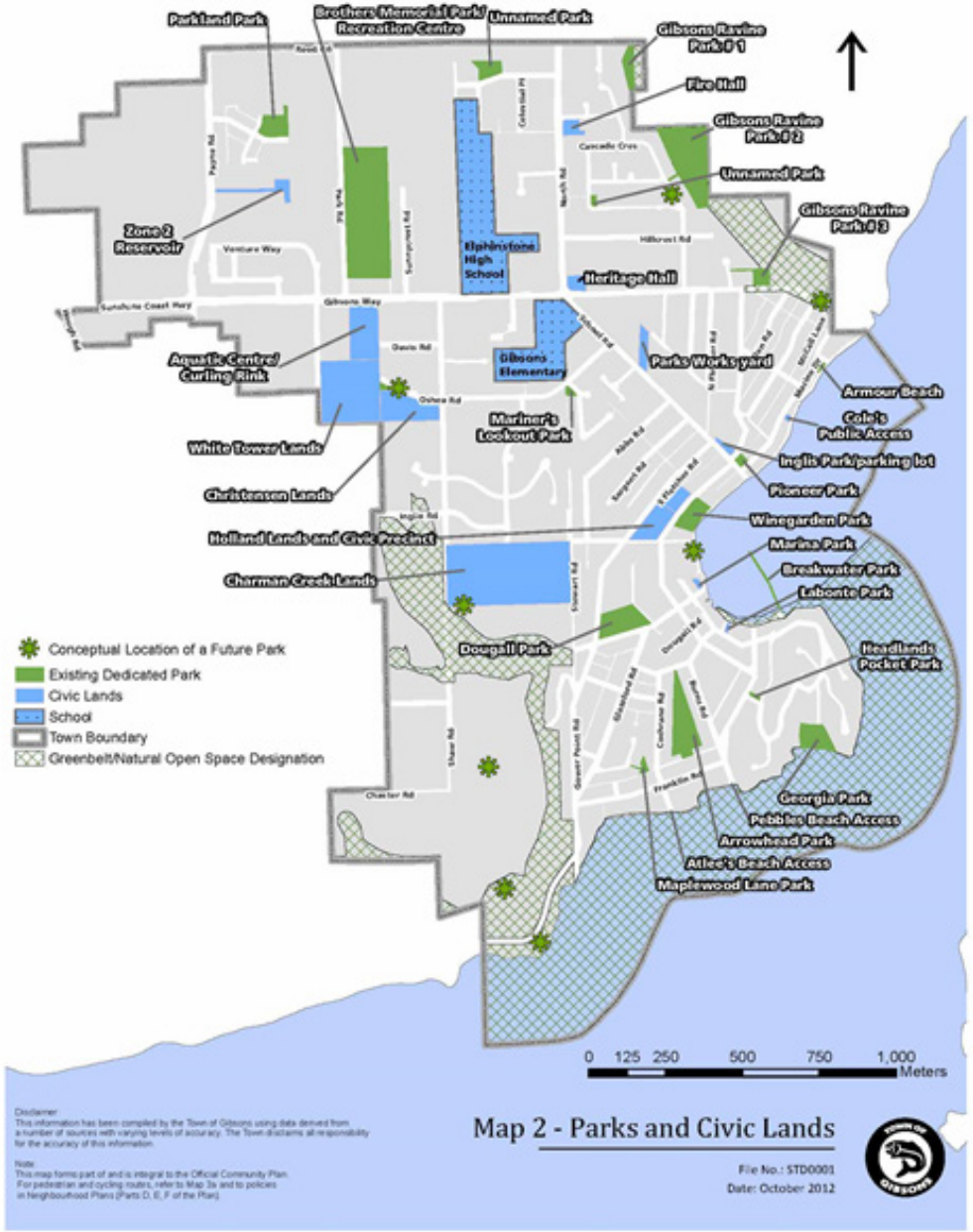
Planned Capital Projects

2018

- Armours Beach - improved park's accessibility and usability via terracing, landscaping, washroom upgrades and the addition of new park furnishings, trees and other plantings: $186,000

2019

- Armours Beach - improve swimming area: $100,000
- Parks Master Plan/Feasibility Study: $29,000



BUILDINGS AND STRUCTURES

AT A GLANCE

to be determined

COMMUNITY GOALS

- TO BE DETERMINED

RELIABILITY AND RISKS

Reliable service requires:

- to be determined

Risks of cutting costs are:

- to be determined

Additional information as required

Insert Photo or other graphic here

ASSET MANAGEMENT

Operations & Maintenance

to be determined

Current & Planned Capital Projects

year

- description of project: $xxx

year

- description of project: $xxx

year

- description of project: $xxx

year

- description of project: $xxx

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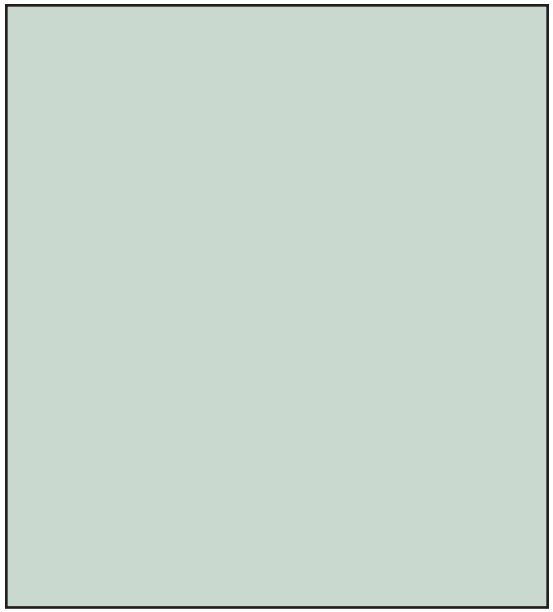

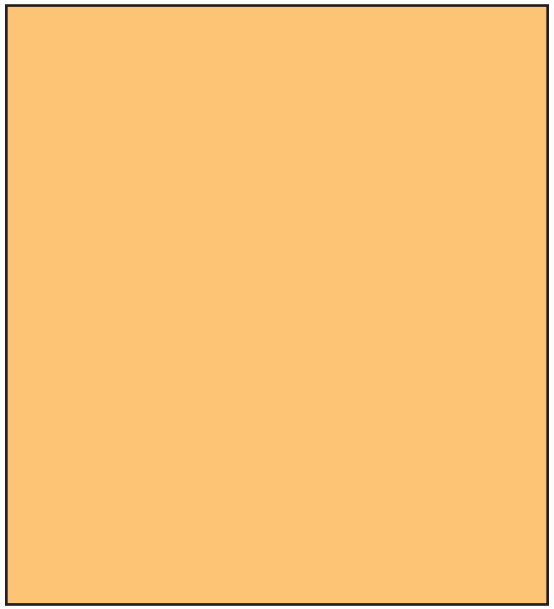

Appendix E: Infrastructure Documentation

Asset Class	Documents
Town of Gibsons Master Documents	Public Works Routine Operations and Maintenance Plan and Procedures, 2018 Plant Routine Operations and Maintenance Plan and Procedures, 2018 Engineering Routine Operations and Maintenance Plan and Procedures, 2018 Parks Routine Operations and Maintenance Plan and Procedures, 2018 Draft Advancing Municipal Natural Asset Management, 2018 Strategic Plan 2016-2018 An Eco-Asset Strategy, 2016 Official Community Plan, 2015 Public Participation Toolkit, 2015 DCC Bylaw Update, 2014 Subdivision and Development Servicing and Stormwater Management Bylaw No. 1175, 2012 PSAB Tangible Capital Asset Inventory, 2010 Comprehensive Infrastructure Management Program, 2003
Sanitary	Sanitary Sewer Regulation Bylaw No. 1194, 2014 Wastewater Collection Strategic Plan, 2008 Wastewater Collection Financial Plan, 2008
Water	Water Rates Study (Updated Annually), 2013-2016 Water Regulation Bylaw No. 1192, 2014 Water Strategic Plan Update, 2014 Aquifer Mapping Study, 2013 Sonic Leak Survey, 2013 Water Audit and Leak Detection, 2008 Water Supply Strategic Plan, 2005
Stormwater	Integrated Stormwater Management Plan Update, 2018 Drainage Infrastructure Policy, 2016 Subdivision and Development Servicing and Stormwater Management Bylaw No. 1175, 2012 Integrated Stormwater Management Plan, 2010
Transportation	Pavement Management Update, 2014 Traffic and Highway Use Bylaw No. 1193, 2014 Pavement Management Plan, 2004
Gibsons District Energy Utility	District Energy Bylaw No. 1995, 2014
Fleet	Asset Management Plan, 2018 Draft
Parks	(none)
Buildings	Community Lands Inventory, 2008

Appendix F: Asset Management Policy (2019 Update, Final Draft)

TOWN OF GIBSONS
Policy Manual

SECTION:	**FINANCE**		
TITLE:	**Asset Management Policy**	**POLICY # 2.9**	
EFFECTIVE DATE:	2019-XX-XX	**APPROVED DATE:** **REVISED DATE:** **RESOLUTION #:**	2019-XX-XX **2019-RXXX**

1 PURPOSE

To set guidelines for implementing consistent Asset Management processes within the Town of Gibsons. The following terms are used within this policy and are defined as follows:

Asset Management: an integrated, lifecycle approach to effective stewardship of infrastructure assets to maximize benefits, manage risk and provide satisfactory Levels of Service to the public in a Sustainable manner. The majority of the services that the Town provides are related to Asset Management.

Engineered Assets: assets that have been constructed and are owned by the Town (e.g., watermains, roads, streetlights, buildings), land that is owned by the Town and supports assets (e.g., land under roads or buildings), and land that is undeveloped and owned by the Town. These assets must be operated, maintained, managed, and, with the exception of land, ultimately replaced as they wear out.

Level of Service: the service level delivered to the public by the Town. This can take the form of the selection of services that are provided (e.g., bike lanes, doggie bags, or a new pool), the standard of infrastructure in place (e.g., concrete sidewalks versus gravel paths), or the standard to which an asset is maintained (e.g., the frequency of scheduled curb sweeping). The desire of Council or the public for a particular Level of Service will directly affect utility fees or taxation.

Natural Assets: naturally occurring land or subsurface features which perform or support service delivery to the Town (e.g., the Gibsons Aquifer, which filters and stores water, and the creeks, which convey and treat stormwater run-off). This category also includes artificial features that mimic naturally occurring features (e.g., ditches, ponds and wetlands). If these assets did not exist, Engineered Assets would be required to provide these services. Natural Assets must be operated and maintained but, if managed appropriately, require no replacement.

Risk: analysis of the 'likelihood' and the 'consequences' of a given event. Establishing the risk associated with lower infrastructure performance due to Levels of Service or postponement of asset replacement will identify system vulnerabilities and assist in prioritizing work. For

example, puddles on a gravel walkway may have a high likelihood of occurring but the consequences are not significant. In comparison, an ageing sanitary main may have a high likelihood of failure and the consequences of a break may be significant.

Sustainable: meeting the needs of the present without compromising the ability of future generations to meet their own needs. In relation to Asset Management a sustainable approach takes into consideration the current and future benefits and costs of existing and new assets or services.

2 OBJECTIVE

To ensure adequate provision is made for operations, maintenance and long-term replacement of major Engineered and Natural Assets by:

2.1 Maintaining assets in the most natural, energy-efficient and reliable manner that cost the least to operate over the life cycle of the asset;

2.2 Ensuring that the Town's services and infrastructure are provided in a Sustainable manner, with the appropriate Levels of Service to all users within the Town;

2.3 Managing Town of Gibsons Engineered and Natural Assets by implementing appropriate Asset Management and financial strategies for those assets;

2.4 Fostering an environment where all Town of Gibsons employees take an integral part in overall management of Town assets by creating and sustaining Asset Management awareness throughout the organization through engagement, training, and development;

2.5 Ensuring resources and operational capabilities are identified and responsibilities for all areas of Asset Management are appropriately assigned;

2.6 Continually seeking opportunities for improving efficiencies in operations, maintenance and asset replacement practices;

2.7 Demonstrating transparent and responsible Asset Management processes that align with established best practices; and

2.8 Meeting legislative requirements for Asset Management.

3 POLICY

3.1 Background

3.1.1 Council's vision and goal for the community includes providing a safe, livable, Sustainable and economically vibrant community underpinned by well managed and maintained infrastructure assets. These assets include but are not limited to efficient transportation networks, an economical and reliable

water distribution network, a safe and reliable sewage collection system, reliable information technology systems, appropriate fleets, and accessible parks, recreation and civic facilities.

3.1.2 The Town of Gibsons is committed to implementing a systematic Asset Management methodology in order to apply appropriate Asset Management best practices across all areas of the organization. This includes ensuring that assets are planned, created, operated, maintained, renewed and disposed of, where appropriate, in accordance with the Town's Levels of Service priorities.

3.1.3 As of December 2017, the Town of Gibsons owns and operates approximately $73 Million (historical costs) of Engineered Assets to support its core business of delivery of service to the community. Although the equivalent values have not been established, the Town also recognizes the additional and significant contribution made by Natural Assets in the delivery of service to the community.

3.1.4 Asset Management is the core service of the Town of Gibsons and appropriate Asset Management is required to achieve our strategic service delivery objectives.

3.1.5 Adopting Asset Management principles will assist Council in achieving its strategic plans and long-term financial objectives.

3.1.6 A strategic approach to Asset Management will ensure that the Town of Gibsons delivers the appropriate Level of Service through its assets.

3.2 Principles

3.2.1 Asset Management will be implemented strategically and systematically using appropriate best-practices throughout all departments of the Town of Gibsons.

3.2.2 Levels of Service will continue to be determined and refined in consultation with the community.

3.2.3 All relevant legislative requirements together with social, economic and environmental impacts are to be considered in Asset Management.

3.2.4 Asset Management principles will be integrated within existing planning and operational processes.

3.2.5 Natural Assets are recognized by Council as performing essential service delivery and will be identified and managed in a similar manner as Engineered Assets.

3.2.6 Asset Management plans will be developed for major service/asset

categories.

3.2.7 An inspection regime will be developed as part of Asset Management to work towards agreed service levels are maintained and to identify asset renewal priorities.

3.2.8 Asset risk, renewals, and Levels of Service defined in adopted Asset Management plans and long term financial plans will inform operation and capital budgets.

3.2.9 Asset renewal plans will be prioritized and implemented progressively based on agreed Levels of Service and the effectiveness of the current assets to provide that Level of Service.

3.2.10 Systematic and cyclical reviews will be applied to all asset classes and are to ensure that the assets are managed, valued and depreciated in accordance with appropriate best practices.

3.2.11 Future life cycle and replacement costs for all asset categories will be established.

3.2.12 Life cycle costs will be reported and considered in all decisions relating to new services and asset classes and upgrading of existing services and asset classes as soon as they are established.

3.2.13 Training in asset and financial management will be provided for relevant staff.

4 SCOPE

This policy applies to all Town of Gibsons activities.

5 LEGISLATION

All aspects of Asset Management within the Town shall be conducted in accordance with applicable legislation.

6 RELATED DOCUMENTS

Asset Management Status Update and Implementation Plan and associated Asset Management Plans (to be developed).

7 RESPONSIBILITIES

Asset Management is a corporate responsibility that involves all staff and members of Council in the effective implementation of Sustainable service delivery.

7.1 Council is responsible for:

7.1.1 adopting this Asset Management Policy and future updates;

7.1.2 allocation of resources;

7.1.3 providing high level oversight of the delivery of the organization's Asset Management strategy; and

7.1.4 ensuring that organizational resources are appropriately utilized to address the organization's strategic plans and priorities.

7.2 The Chief Administrative Officer has overall responsibility for:

7.2.1 overseeing the development of Asset Management strategies, plans, and procedures, in conjunction with the management team;

7.2.2 reporting to Council and updating the community regularly on the status, effectiveness, and performance of work related to the implementation of this Asset Management policy; and

7.2.3 considering and incorporating Asset Management in all other corporate plans (e.g. Strategic Plans).

7.3 The Director of Infrastructure Services is responsible for:

7.3.1 ensuring that the most up to date information on the Town's Natural and Engineered Assets is gathered and maintained in the Town's Geographical Information System (GIS) as well as other software and databases;

7.3.2 using industry standard unit costs and service lives for all infrastructure components, taking into account variations due to unique local conditions;

7.3.3 establishing infrastructure replacement strategies through the use of full life cycle costing principles;

7.3.4 establishing policies that define full life-cycle costing impact of proposed community amenities and variances to infrastructure standards;

7.3.5 establishing operations and maintenance policies to deliver Levels of Service and extending the useful life of assets; and

7.3.6 preparing Asset Management Plans for each asset class in consultation with

other Directors.

7.4 The Manager of Maintenance and Operations is responsible for:

7.4.1 maintaining and managing natural and engineered assets at defined levels; and

7.4.2 conducting ongoing reviews and implementing changes to realize efficiencies in operations and maintenance practices.

7.5 The Director of Planning is responsible for:

7.5.1 updating standards, goals and objectives in the Official Community Plan and other bylaws, policies and plans to establish consistency with sustainable Asset Management principles.

7.6 The Director of Finance is responsible for:

7.6.1 in consultation with other Directors, determine if the projected revenues from incremental as well as full build out of the Town, as outlined in the Official Community Plan, will support over time the assets necessary to provide established Levels of Service to the Community;

7.6.2 planning financially for the appropriate level of maintenance for assets to deliver established Levels of Service with the goal to extend the useful life of Town assets;

7.6.3 establishing financial plans for consideration by Council that will work towards stable, long-term funding for replacement, renewal and/or disposal of assets; and

7.6.4 valuing and depreciating assets in accordance with appropriate best practices.

8 REVIEW DATE

This policy has a life of 4 years. It will be reviewed in 2023.

Appendix G: Routine Operations and Maintenance

Public Works Scheduled Tasks

	Task	Asset Class	Month Unknown	Total Hours Annually	Frequency	Resource*	Notes
Water	Hydrant maintenance and inspection	Water		100	Annually	Crew (2)	
	Uni directional water main flushing	Water		100	Annually	Crew (2)	Weather dependent, but either late spring or early fall
	Water valve exercising	Water	100	100	Annually	Crew (1)	
Drainage	Catch Basin Cleaning	Drainage		112.5	Annually	Crew (2)	
	Catch Basin Grate Cleaning			75	Seasonally	Crew (2)	Average
	Storm Flushing	Drainage		15	Annually	Management	Longer once in 3 years for contract renewal
	Creek Cleaning			7.5	Annually	Crew (2)	
Transportation	Brush cutting	Roads		7.5	Annually	Management	
	Crack sealing program	Roads		50	Seasonally	Crew (2)	Average: Weather needs to be warm and dry
	Dust control	Roads		7.5	Annually	Management	
	Lane grading	Roads		45	Quarterly	Crew (2-3)	Average: 6 day total, not including complaint driven requests
	Line painting	Roads		7.5	Annually	Management	
	Paving	Roads		7.5	All Year	Management	
	Sidewalk inspection & maintenance	Roads		22.5	Annually	Crew (1)	
	Sweeping program	Roads		90	Monthly	Crew (1)	
Sanitary	Sanitary Manhole and Main CCTV Inspection	Sanitary		15	Annually	Management	
	Flushing program	Sanitary		67.5	3 Times per Year	Crew (2)	every 4 months for cirtical sewer mains, 2 guys 3 days
Other Routine	Crew Talks			26	Weekly	Crew (All)	
	Monthly Budget Review			2	Monthly	Management	
	Council Workshop			7.5	Annually	Management	
	Annual Budget			15	Annually	Management	
	New Equipment Purchasing	Other		37.5	Annually	Management	After budget
	Spring clean-up	Other		22.5	Annually	Management	
	Geothermal	Other		130	Daily	Crew (1)	Daily Checks, No scheduled preventative maintenance currently being done
	Green Waste	Other		208	?	Crew (1)	4 hours a week, 1 person
	PW's Fleet Maintenance	Other		50	All Year	Crew (2)	Includes flusher, salter, etc
	Building Inspections			36	Monthly	Crew (1)	
	Cleaning			52	Weekly	Avail Crew	End of day Friday
	Safety Inspections		3.75	3.75	Annually	Crew (1)	Smoke, extinguisher, alarm, lights

*Task time assumes provided crew size

Gray highlight denotes contracted tasks

Treatment Plant Scheduled Tasks

	Tasks*	Total Staff Hours Annually	Frequency	Resource	Notes
Cleaning	Plant Lift Station	130	2-3 Times, Weekly	Crew (1)	
	Equipment	130	2-3 Times, Weekly	Crew (1)	
	Prowse Lift Station	10	Semi Annually	Crew (1)	After Flygt comes (6H) + 6 moth clean inbetween
	Reservoir Roof	9	3 Times, Yearly	Crew (1)	
	Pump House	8	Quarterly	Crew (1)	
	Thickener	195	2-3 Times Weekly	Crew (1)	
	Headworks	104	Weekly	Crew (1)	
	UV Lights	30	Twice annually	Crew (1)	Twice annual cleaning, 2 day job
	Power Washing	37.5	Annually	Crew (1)	Power washing centrifuge, SBR walkway, headworks, summer time job
	Shop Clean Out	30	Semi Annually	Crew (1)	
	SBR	156	Semi Weekly	Crew (1)	Scraping Grease
Maintenance	Lube and Grease Equipment	52	Weekly	Crew (1)	
	Blower Oil Changes	24	Twice Annually	Crew (1)	3 Hours per Unit, 4 Units
	Generator Servicing	6	Annually	Crew (1)	6 hours of crews time, Olsen comes annually to spend 2 days
	Process Control Centrifuge	312	Every Second Day	Crew (1)	Makes adjustments for 1-3H
	Flygt Pump Maintenance	7.5	Annually	Crew (1)	6 pumps (SBR, Prowse, Plant)
Reporting and Testing	Plant Process and Control	624	Every Second Day	Crew (1)	Adjustmenst in SBRs, pump run times, etc
	Water Samples	260	Weekly	Crew (1)	Sampling for Coastal Health testing
	Grab sampling of WWTP	48	Monthly	Crew (1)	To Maxim lab for Ministry of Environment testing
	Lab SBR and Digester Testing	234	Every Second Day	Crew (1)	Time to sample, dry and cook samply, get results, and adjustment math
	SCADA Alarming and Monitoring	13	Weekly	Crew (1)	Dialer Test
	Chlorination	20	Annually	Crew (2)	Residual tests daily while chlorinating
Other Routines	Daily Tasks	780	Daily	Crew (1)	Inspections, recording, MCC room, head works cleaning, daily meetings, clean headworks screw
	Ordering Supplies	104	Every 2 Months	Crew (1)	
	Biosolid Bins	104	Twice Weekly	Crew (1)	

* Future possible tasks include added chlorination processes and rotter trcuk contract

Gray highlight denotes contracted tasks

Engineering Scheduled Tasks

Tasks*	CATEGORY	Total Staff Hours Annually	Resource	Frequency
Sanitary CCTV and Flushing		20		Annually
Mapping		6	GIS Technician	
Contracted Review		4	Management	
Internal Review		10	Asset Management Coordinator	
Drainage CCTV and Flushing		20		Annually
Mapping		6	GIS Technician	
Contracted Review		4	Management	
Internal Review		10	Asset Management Coordinator	
CCC Testing		0	Technologist	Annually
Meter Reading		172	Technologist	
Residential		100	Technologist	Quarterly
Commerical		24	Technologist	Semi Annually
Follow Up		48	Technologist	Following Reading
Water Monitoring, Admin, Review		0	Technologist	Annually
Biweekly Work Planning		52	Infrastructure Services	
Monthly Report		6	Infrastructure Services	
Monthly Budget Review		24	Director of IS	
Quarterly Report		16	Director of IS, Manager of M&O	
Water and Wastewater Rates Reporting		10	Asset Management Coordinator	
Annual Budget		100	Director of IS	
Review Contracts		8	Mananger of M&O	
Property Drainage Porject Review		24	Infrastructure Services	

*Future possible scheduled tasks for Engineering: Sanitary CCTV Inspection, Storm CCTV Inspection, stream inspections, pond inspections, and line painting contract management

Gray highlight denotes contracted tasks

Parks Scheduled Tasks

	Tasks	Total Staff Hours Annually
Recreation	Aquaitic Centre	40
	Community Centre	252
	Curling Rink	90
Parks	Armours Beach	65
	Arrowhead	22.5
	Aurora	70
	Beaches (Franklin, Pebbles, Holland)	22.5
	Brothers	217.25
	Charman Creek	91.5
	Dempster	89.5
	Dougall	289.5
	Georgia Beach	39.5
	Gibsons Creek	35
	Headlands	12.5
	Holland	598.5
	Inglis	257
	Labonte	31.5
	Landing	1639.5
	Mariners	27
	Parkland	188.25
	Pioneer	183
	Seawalk	422.75
	Steinbrunner	31.5
	White Tower	273.5
	Winegarden	442.5
Other Tasks	Mtg/Train/Admin	179.5
	Equipment Maint	52.25
	Facilities	296
	Garbage	1365.25
	Streets	296.25
	Trails	170

Appendix H: Annual Work Plans and Status Updates

2017 Work Plan Updates

2017 Work Plan Item	Current Status
Create AMPs for Water, Fleet and Equipment, and District Energy Utility asset classes;	Water Asset Management Plan is at 65%.
Implement GIS web interface for use in the office with improved access to supporting documents and task specific reports and printing templates;	GIS web interface has been improved, support documents have been created, and templating is functional. Improved linking has also been completed between the Asset Finda inventory query and WebGIS mapping.
Review functionality of the AssetFinda iPad app, and options for different GIS interfaces;	AssetFinda functionality has been reviewed and other options were explored throughout the year. Contract has been renewed with Asset Finda at a discounted cost, for a 3 year term.
Explore tools and processes to improve electronic data capture process for new assets;	Successfully used Asset Finda to capture data, including mapping and condition assessments of select drainage infrastructure and parks assets.
Continue flushing and videoing programs for drainage and sanitary sewer systems;	Sanitary and storm flushing and videoing program was completed as planned in 2017.
Integrate flushing and video findings with AssetFinda;	Staff worked in partnership with Asset Finda to create a template to integrate defect information and direct video access into Asset Finda.
Update the Integrated Stormwater Management Plan;	ISMP is in progress.
Establish a Road Pavement Management Policy;	Public Works and Parks policies will be reviewed by a consultant this year to determine gaps and priorities. Contract to be managed by Manager of Maintenance and Operations, and Director of Infrastructure Services.
Breakdown non-linear assets into components;	Information has started being captured by Asset Finda through a collective effort from plant crew, AMC, MMO, and finance.
Close the drainage inventory gaps;	Culvert inventory and condition information has been collected, quality checked, and integrated into Asset Finda. Review of findings will be performed by Manager of Maintenance and Operations.
Explore a Tangible Capital Asset and AssetFinda inventory merge;	Inventory water was completed and integrated into Asset Finda, including condition and criticality information from the Water Strategy. Options for full TCA and Asset Finda integration are still under review.
Create digitized inspection forms and checklists; and	Digitized forms have been created for hydrant inspection and maintenance, manhole inspections, and flushing. These forms will be reviewed with the new version.
Formalize a public communication plan for asset management.	Moving forward in partnership with Communications Coordinator.

2018 Work Plan

1.0 Know Your Assets (Inventory)

- Create a process to align finance, engineering, and Asset Finda inventories
- Provide training to office staff and public works crews for WebGIS changes and improved capabilities
- Improve GIS procedures and documentation for updating new subdivision and asset data
- Consolidate plant inventory information from drawings and documentation assets for Plant Crew review
- Train field staff how to continually improve existing data in the iPad, and coordinate bulk data improvement with digitized processes
- Formalize the CCTV contract processes, including data management
- Integrate CCTV data for sanitary and storm utilities into Asset Finda
- Formalize the Parks asset inventory by collecting infrastructure with Asset Finda and cross reference with existing Director of Finance inventory lists
- Integrate any ISMP recommended drainage pipe and culvert upsizing data into Asset Finda
- Train public works, treatment plant, and parks crews on new Asset Finda version

2.0 Know Your Financial Situation

- Focus on coordinating the needs of Finance and Engineering for inventory, reporting, and data collection
- Explore using Asset Finda as a tool for the Manager of Maintenance and Operations to manage costs of works request and scheduled tasks
- Explore asset management's grant opportunities for Town projects and initiatives

3.0 Understand Decision Making (Politics)

- Complete templates for infrastructure quick guides intended as quick asset class overviews for Council and the public
- Move forward water, fleet and equipment, and district energy utility asset management plans
- Manage consultant review of policies, procedures, and scheduled O&M tasks

4.0 Manage Your Asset Lifecycle (Operations and Maintenance)

- Finalizing and ongoing review of the Scheduled Operations and Maintenance Plans for Infrastructure Services including Parks, Plants, Public Works, and Engineering.
- Train public works to capture and update works request data in the field
- Conduct ongoing reviews of the new updated Asset Finda version's functionality
- Implement iPads for parks, train staff and review opportunities for using Asset Finda as a tool
- Integrate scheduled operations and maintenance tasks with Asset Finda to be managed as works requests
- Continue working with operations crews to find opportunities for form and process digitizing
- Complete crack-sealing, patching, and replacement programs

5.0 Know the Rules

6.0 Sustainability Monitoring

- Complete ISMP Update and conduct review of findings and recommendations
- Complete groundwater monitoring and conduct review of finding and recommendations

2018 Work Plan Updates

1.0 Know Your Assets (Inventory)

2018 Work Plan	Update
Create a process to align finance, engineering, and Asset Finda inventories	Agreed to keep inventories separate for now, but stay in close communication. Finance does not need inventory to the same detail and level that engineering does. Engineering inventories will be used for replacement costs and mapping, whereas finance inventory records historical and depreciation costs.
Provide training to office staff and public works crews for WebGIS changes and improved capabilities	Office staff and key public works crew members have been trained on WebGIS. The crew has had some success in implementing this training to respond to BC OneCalls directly.
Improve GIS procedures and documentation for updating new subdivision and asset data	
Consolidate plant inventory information from drawings and documentation assets for Plant Crew review	Water plant inventory has been consolidated on Asset Finda and is being reviewed by finance and public works staff.
Train field staff how to continually improve existing data in the iPad, and coordinate bulk data improvement with digitized processes	Bulk data collection and key data updates have been performed with public works and parks staff with the Asset Finda iPad application.
Formalize the CCTV contract processes, including data management	CCTV data collected by contractors will be managed jointly between GIS staff, for mapping and work planning purposes, and Asset Finda staff, for data accessibility solutions.
Integrate CCTV data for sanitary and storm utilities into Asset Finda	Staff have worked with Asset Finda to develop a template to integrate CCTV findings with Asset Finda.
Formalize the Parks asset inventory by collecting infrastructure with Asset Finda and cross reference with existing Director of Finance inventory lists	Parks asset inventory has been collected and cross referenced with financial data.
Integrate any ISMP recommended drainage pipe and culvert upsizing data into Asset Finda	ISMP is in progress.
Train public works, treatment plant, and parks crews on new Asset Finda version	Public works has been trained on the Asset Finda iPad application, including mapping, data updates, and works requests updating. Parks will be using the iPads primarily for digitized forms at this point.

2.0 Know Your Financial Situation

2018 Work Plan	Update
Focus on coordinating the needs of Finance and Engineering for	Finance and engineering created a cost estimate sheet to translate project costs totals, which are used for engineering

inventory, reporting, and data collection	fees and bonding calculations, with the totals that Finance needs to add to Tangible Capital Asset reporting.
Explore using Asset Finda as a tool for the Manager of Maintenance and Operations to manage costs of works request and scheduled tasks	Manager of Maintenance and Operations is exploring Asset Finda as a tool. Routine Wastewater Treatment Plant tasks have been integrated with the system, but will need overall process changes to implement.
Explore asset management's grant opportunities for Town projects and initiatives	Finance, engineering, and asset management staff spoke about asset management grants. One grant is being applied for in collaboration with an initiative with the Water Partnership. Grant opportunities will continued to be explored into 2019.

3.0 Understand Decision Making (Politics)

2018 Work Plan	**Update**
Complete templates for infrastructure quick guides intended as quick asset class overviews for Council and the public	With large support from the communications coordinator, infrastructure quick guides will be ready by the end of 2018 for council.
Move forward water, fleet and equipment, and district energy utility asset management plans	Fleet and Equipment asset management plan has been completed and is in final draft form.
Manage consultant review of policies, procedures, and scheduled O&M tasks	2019

4.0 Manage Your Asset Lifecycle (Operations and Maintenance)

2018 Work Plan	**Update**
Finalizing and ongoing review of the Scheduled Operations and Maintenance Plans for Infrastructure Services including Parks, Plants, Public Works, and Engineering.	The routine operations and maintenance plans are completed, but should be updated and reviewed as needed. Results from these plans have been integrated in to Finance's processes, public works crew scheduling, staffing decisions, and budgeting.
Train public works to capture and update works request data in the field	Works requests are now assigned electronically and updated in the field.
Conduct ongoing reviews of the new updated Asset Finda version's functionality	The new update of Asset Finda software has been implemented now, and staff have gotten a chance to review the software's functionality and future potential.
Implement iPads for parks, train staff and review opportunities for using Asset Finda as a tool	iPads have been distributed to the parks crew. Asset Finda was used for inventory pick up including parks, garbage bins, and benches locations, photos, and condition assessment data. iPads are more generally used by this crew for digitized monthly inspections of trails and parks.
Continue working with operations crews to find opportunities for form and process digitizing	Public Works' hydrant inspections, uni-directional watermain flushing, and sidewalk inspections were all completed using digital forms on the iPads this year which

	will greatly improve data opportunities in the coming few years. Parks is using iPad-based forms for monthly inspections of trails and parks, which update the Director of Parks in real time with photos, inspection results, and work planning notes.
Complete crack-sealing, patching, and replacement programs	Road maintenance was completed this year.

5.0 Know the Rules (Legislation)

6.0 Sustainability Monitoring

2018 Work Plan	**Update**
Complete ISMP Update and conduct review of findings and recommendations	ISMP is in progress.
Complete groundwater monitoring and conduct review of finding and recommendations	Groundwater monitoring was completed.

2019 Work Plan Updates

1.0 Know Your Assets (Inventory)

- Collect wastewater **non-linear asset data** for treatment plant and lift station, and review water infrastructure data with operations crew
- Finish historical **integration of CCTV data** for data review and updates, crew data access, and management work planning. Formalize processes and deadlines for work planning and mapping and continue with annual videoing program.
- **Integrate ISMP findings** with Asset Finda including pond and stream attributes and classifications, flagging undersized stormwater pipes, and mapping critical drainage paths for maintenance
- Find opportunities to **link works requests to assets** in Asset Finda
- Prioritize **filling data gaps** with building and structures, signage, road data, asset conditions
- Reviewing **data processes**, responsibilities, controls, and permissions

2.0 Know Your Financial Situation

- Explore options for **integrating Finance inventories with Asset Finda** as TCA asset classes
- Meet to review asset management's **grant opportunities** for Town projects and initiatives
- Collect **works requests cost data** in the field, explore options for linking to GLs and timesheets
- Use finance cost estimate sheets to **update unit costs** in Asset Finda

3.0 Understand Decision Making (Politics)

- Publish **infrastructure quick guides** for asset classes and integrate feedback from Council
- Review **asset management plan priorities** with management
- Work with management to update **Asset Management Policy** for adoption by council
- Update and present **Asset Management Status Update and Implementation Plan** to new council, including updated appendices

4.0 Manage Your Asset Lifecycle (Operations and Maintenance)

- Continue to find further opportunities for **process digitization** for crews
- Further **integrate tasks from routine O&M plans** into Asset Finda and work planning processes
- **Formalize digitized forms data processes** for work planning, flagging capital works, and creating works requests.
- **Review digitized forms for liability** security and vulnerabilities. Explore hosting a risk workshop with MIABC for Council, crew, and staff.
- Ongoing Public works and Parks **iPad training** including works requests and data updates

5.0 Know the Rules

- Complete **consultant review of policies, procedures, and scheduled O&M tasks** to identify gaps

6.0 Sustainability Monitoring

- Continued **industry involvement** in natural asset management