

To: Mayor and Council

From: Lorraine Hilton
Chief Administrative Officer

Subject: Asset Management Plan

File: 1855.30
Date: December 13, 2017

To Council
December 18, 2017

RECOMMENDATION

That in respect to the proposed Asset Management Plan and related materials provided by Brentwood Advisory Group the following schedule be endorsed:

- December 2017 Materials made available on the District website
- January 2018..... A drop in Open House held for public consultation
- January 2018..... Committee of the Whole review including results of the Open House and recommendation to Council
- February 2018 Council considers formal approval

BACKGROUND

The preparation of an asset management strategy is a deliverable in the District's Strategic Plan. The District was successful in obtaining a planning grant through the Union of British Columbia Municipalities for up to \$10,000. Subsequently, the District engaged the Brentwood Advisory Group to develop a sustainable asset management plan and strategy for implementation, for Council's consideration. The report as prepared is attached.

DISCUSSION

Representatives of the Brentwood Advisory Group will be present at the Council meeting to provide a presentation/overview of the proposed strategy, and to answer questions from members of Council. In line with the District's Public Participation/Community Engagement Policy, it is anticipated that next steps would include undertaking a public consultation exercise (open house) to obtain input from the public, then reporting back to Council's Committee of the Whole with the results of that consultation, and a recommendation.

Should there be any additional information Council wishes to see addressed, this can be relayed to the consultant for inclusion in the materials prior to the proposed public consultation.

Respectfully Submitted,



Lorraine Hilton, CAO

Attachments

[November 20, 2016 – Report to Council RE: Asset Management - UBCM grant](#)
[August 14, 2017 – Report to Council RE: Contract Award - Asset Management](#)
[Brentwood Advisory Group – Cover Letter, December 12, 2017](#)
[Brentwood Advisory Group – Sustainable Asset Management Strategy](#)



Brentwood Advisory Group

767 Stelly's X Road, Brentwood Bay, BC

December 12, 2017

Mayor Williams and Council

District of Highlands

1980 Millstream Road

Victoria, BC V9B 6H1

Dear Mayor Williams and Councilors,

Thank you for the opportunity to assist Council in considering how to best move forward with Highlands' Asset Management.

Council asked that we prepare an Asset Management Plan for the community and provide a strategy to implement it over time. Council has also asked that we consider including Natural Assets, specifically the Wark-Colquitz Aquifer.

We have followed the Asset Management British Columbia Framework – Asset Management or Sustainable Service Delivery approach for this project which is Assess, Plan and Implement.

The Proposed Asset Management Plan has been evaluated using the District's Sustainable Highlands Decision Making Framework and in accordance with the District's Public Participation/Community Engagement Policy; this is an Inform/Consult assignment with the following steps:

- December 2017 Introduction for Council and referral for public consultation
- December 2017 Materials made available via Municipal Website
- January 2018 Open House Drop in for public consultation
- January 2018 Committee of the Whole for review and recommendations
- February 2018 Council considers formal approval

Specifically:

1. We have assessed the District's **Asset Management Practices and People** and note the District has the basic capacity to undertake asset management as an ongoing corporate function.
2. We have assessed the **Current State of the District's Assets** and estimate that the District's public infrastructure is in reasonable condition and is rated as **B** overall.
3. We have assessed the District's **Current Asset Reinvestment Funding** and estimate that the District is currently funding just over **50%** of minimum annual replacement needs.
4. We have developed a **Sustainable Asset Management Policy** that incorporates the District's natural assets. A draft District of Highlands Sustainable Asset Management Policy is recommended for Council approval. (Report Appendix 5.1)
5. We have developed seven basic **Asset Management Plans** for each category of assets. These plans are recommended for Council approval. (Report Sections 4.1 to 4.7)

After the adoption of the District's Asset Management Policy and Plans, we suggest the next steps to entrench asset management as an ongoing priority are:

6. Incorporate a Natural Assets Financial Disclosure Note in the Audited Financial Statements. This note will be included in the Annual Audited Financial statements to bring awareness of the value and importance of Natural Assets.
7. Develop staff capacity and obtain coaching assistance in 2018. Use the balance of Asset Management funding previously approved in 2017 for that task.
8. Maintain an interim \$20,000 crack sealing, \$25,000 shouldering & drainage and \$30,000 general road contingency budgets while the Pavement Management Plan is developed.
9. Complete a Road Surface Profile Assessment in 2018 (\$30,000) and establish a formal Pavement Management Program.
10. Reduce the existing general municipal property tax rates and implement a separate Sustainable Assets Property Tax Levy to clearly identify infrastructure funding for taxpayers. This links property tax based funding with the asset management plan and provides a transparent means of accountability for the program.
11. Establish a planned program of property tax funded increases in asset reinvestment to reach sustainable levels over a defined period. Establish this via Policy and consider the approach each year during the budget process. This does not commit future Councils to the funding increases but provides a policy approach to be considered each year.

Making a commitment to measurement and reporting will ensure that asset management remains a priority and becomes an everyday part of the District's operations.

12. Publish an Asset Condition Scorecard each year as part of the Community Annual Report. This scorecard will provide accountability and help build awareness about the value of built and natural assets through an annual snapshot of the District's infrastructure.

Building good asset management practices into the everyday business of the District will naturally bring focus and priority to the management of natural and built assets in the municipality:

13. Maintain a consolidated asset database.
14. Regularly update asset replacement costs, remaining useful life estimates and condition assessments.
15. Update Asset Management Plans each year in conjunction with the Annual Budget process.

While the approach suggested in the report will represent a significant financial commitment and require some priority of staff capacity, it is a necessary step to continue the effective provision of services to your community and protect future generations of Highlands residents.

Sincerely,



Paul Murray
Brentwood Advisory Group

DISTRICT OF HIGHLANDS

Asset Management Strategy

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1 SUMMARY

Many municipalities are developing strategies to manage their assets. The impetus is being driven by changes to public sector accounting guidelines, eligibility for Federal grants, Provincial legislative requirements as well as program support and funding.

The District of Highlands made the introduction of an Asset Management Strategy and the process of incorporating Natural Assets in to that framework a priority for 2017.

"ASSET MANAGEMENT • Maintain assets in an appropriate state of repair • Optimize capital investments to meet public and economic needs while achieving value for the investment."

The Challenge:

The challenge facing the community is that the District (like most municipalities) has a significant infrastructure replacement obligation in the long-term for which moderate investment has been made to date. Some of the existing assets such as roads were constructed before the community incorporated as a municipality. Since that time those replacement obligations have become part of the responsibilities of the District. A planned asset management and reinvestment program is required to maintain service to the community without compromising the ability of future generations of Highlands residents to meet their own needs.

Recent Progress:

Over the last few years good progress has been made through the introduction of Tangible Asset Accounting (TCA) disclosure requirements. Like all Canadian municipalities, public infrastructure is recorded at historical cost and now depreciated. This is a good first step but does not address the question of sustainable infrastructure replacement.

Significant work to assess and monitor the Wark-Colquitz Groundwater Aquifer has been undertaken. This natural asset is regularly monitored and status reports are published and reviewed each year. The District wishes to include this asset category in the new Asset Management Plan.

The District also recently developed a funding approach to replace fire buildings and equipment through the innovative use of community savings generated by the Fire Department's successful tanker shuttle accreditation project.

Asset Management for Sustainable Service Delivery - A BC Framework:

The approach used for this work is based on the Asset Management British Columbia Framework. This framework was developed by Asset Management BC and establishes a high-level, systematic approach that supports local governments in moving toward service, asset and financial sustainability through an asset management process. The framework reflects current leading practices and aligns with internationally accepted approaches such as the [International Infrastructure Management Manual](#) and the [ISO 55000 Standard for Asset Management](#).



*Asset Management BC – Asset Management for Sustainable Service Delivery – A BC Framework

The Framework is built on four key elements: People, Information, Assets and Finances and is structured in three stages **Assess**, **Plan** and **Implement**.

Using this approach, an initial high-level assessment was completed using existing information about asset condition, valuation and funding. Next, an Asset Management Policy and individual Asset Management Plans were prepared. The groundwater Natural Asset category was added. Finally, an overall Asset Management Strategy was developed. A series of next steps are also recommended to implement the framework, align the approach with the annual budget and begin reporting out.

Assess:

An initial assessment of available information, assets and capacity was completed:

1. **Assessment of Asset Management Practices and People (complete).**
"The District is well placed and has the basic capacity to undertake asset management as an ongoing corporate function."
2. **Assess Current State of Assets (complete).**
*"The District's public infrastructure is in reasonable condition and is rated as **B** overall."*
3. **Assessment of Current Asset Reinvestment Funding (complete).**
*The District is currently funding just over **50%** of average annual replacement needs.*

Plan:

Once the assessment work was completed, an Asset Management Policy, Individual Plans and a Strategy were prepared. Integration with a yet to be developed long term financial plan is also a recommended next step:

4. **Asset Management Policy (complete).**
This is a document that broadly outlines the principles and mandated requirements for undertaking asset management across the organization in a systematic and coordinated way, consistent with the organization's plans. *A draft District of Highlands' Asset Management Policy is recommended for approval. (Appendix 5.1)*
5. **Asset Management Plan (complete).**
Long-term plans that outline the assets, asset conditions and resources required to provide a defined level of service in the most cost-effective way. Each Asset Management Plan is a readable and user-friendly living document that is continuously improved to incorporate new information or changing requirements. *Asset Management Plans have been developed for each category. Further work to refine these plans and continue to incorporate natural assets is noted. (Sections 4.1 to 4.7)*
6. **Asset Management Strategy (complete).**
The high-level, long-term approach to asset management, including Asset Management Plans and objectives for managing natural and engineered assets. *An overall strategy has been developed. (Section 3)*

7. Integrate to Long-term Financial Plan (next steps).

Asset Management Plans are integral to a robust Long-Term Financial Plan and support sustainable service delivery. This integration identifies gaps between long-term costs and available funding. The financial planning process identifies opportunities to close the gap through adjusting service levels (reducing costs) and/or increasing funding (raising revenue). *Development of a District of Highlands Long Term Financial Plan and integration with the District's Asset Management Strategy is recommended as a future next step.*

Implement:

Plans and practices are developed to be implemented. This is the next step.

8. Implement Asset Management Practices (next steps).

Asset management practices establish and implement ways that integrate people, organizational culture and capacity. An Asset Management Plan is only effective if it is entrenched in the regular business of the community. This can be a daunting task at the start, especially for a small municipality with very limited capacity and many pressing concerns. If Council provides modest assistance to develop capacity over the next three years this is a realistic possibility.

Recommended next steps after approval of Asset Management Policy and Plan:

- Train staff to enhance asset management competencies, skills, and organizational capacity.
- Consolidate asset records and TCA records into a single database and prepare a consistent approach to categorizing and recording assets.
- Regularly update the consolidated asset database by adding new assets, identifying asset renewals, replacements, and decommissioned assets.
- Update the Asset Management Plan each year in conjunction with the Annual Budget process by regularly updating asset replacement costs, condition assessments, useful life estimates and financing targets.

9. Measure and Report (next steps).

Annual and financial reports include asset management objectives and outcomes identified in an Asset Management Strategy and Asset Management Plans. Reporting demonstrates measurable progress in implementing and achieving outcomes that contribute to Sustainable Service Delivery. Increased awareness and education about the District's Natural and Engineered Assets would also be another positive outcome of this work.

Recommended next step after implementation of Asset Management Policy and Plan:

- Publish performance results in community annual report.

2 INTRODUCTION (ASSESS, PLAN & IMPLEMENT)

The District of Highlands Council made the introduction of an Asset Management Plan a priority for 2017. The District has also expressed a desire to begin incorporating natural assets into its Asset Management framework.

"ASSET MANAGEMENT • Maintain assets in an appropriate state of repair • Optimize capital investments to meet public and economic needs while achieving value for the investment."

Asset Management is an integrated process, bringing together skills, expertise, and activities of **People**; with **Information** about a community's physical **Assets**; and **Finances**; so that informed decisions can be made supporting Sustainable Service Delivery. **There are three stages: Assess, Plan and Implement.**



*Asset Management BC – Asset Management for Sustainable Service Delivery – A BC Framework

Our Approach: Asset Management for Sustainable Service Delivery - A BC Framework:

The approach used to develop the District's Asset Management Strategy is based on the Asset Management British Columbia Framework – Asset Management for Sustainable Service Delivery. This 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 framework reflects current best practices and aligns with internationally accepted best practices such as the [International Infrastructure Management Manual](#) and the [ISO 55000 Standard for Asset Management](#).

The Framework is built on four key elements; People, Information, Assets and Finances and is structured in three stages **Assess, Plan** and **Implement**.

Using this approach, an initial high-level assessment was completed using existing information about asset condition, valuation and funding. Next, an Asset Management Policy and individual Asset Management Plans were prepared. Finally, an overall Asset Management Strategy was developed.

Should the District approve the Asset Management Policy, Plans and Strategy a series of next steps are also recommended to develop the capacity to make Asset Management a priority, gradually implement the framework, align the approach with the annual budget through a Long Term Financial Plan and then begin reporting out via the community annual report.

Assessment of Current Practices and State of Assets:

ASSESS

Assess Asset Management Practices

Determine organizational capacity to undertake asset management as an ongoing corporate function. This includes a high level assessment of all the core elements: **people, information, assets, and finances**. The assessment results serve as a foundation for developing and implementing the **Process**.



Assess the Current State of Assets

Assessing the current state of assets includes; knowing the inventory, asset conditions, both defined customer and technical levels of service and risks within each asset group. This assessment is the foundation for the development of **Asset Management Plans**.

*Asset Management BC – Asset Management for Sustainable Service Delivery – A BC Framework

Current Asset Management Practices.

"The District is well placed and has the ability to undertake asset management as an ongoing corporate function."

People: District staff have a good basic knowledge of general practices and reasonable levels of information are known about individual assets. Capacity to take on a regular program of Asset Management will require a commitment of staff time occasionally supplemented with consulting assistance. This would be sufficient to maintain a modest asset management approach, but may require some adjustment in other priorities to create the time needed to focus on this work each year.

Information: Reasonable information is known about the current state of assets. It is currently held in a variety of sources rather than organized within a coordinated asset management set of data. Some replacement cost data is not current; some condition assessments could be improved upon and remaining useful life estimates need to be confirmed in some areas.

Assets: The District has made good progress along the Asset Management continuum through the introduction of Tangible Asset Accounting (TCA) disclosure requirements. Like all Canadian municipalities, public infrastructure is recorded at historical cost and now depreciated. This is a good first step but does not address the question of sustainable infrastructure replacement planning.

Funding: Moderate levels of funding have recently been made available for the replacement of Fire Buildings and Equipment. Reactive road top reinvestment is made based on annual assessments by the District’s road consultant. Funding to regularly monitor the Groundwater Aquifer is built into the annual operating budget. A Road Reserve fund, Gas Tax Reserve, Fire Building and Equipment Reserve and General Capital Reserve have been accumulated totally approximately \$1.4 million dollars. Sustainable funding sources have not been specifically determined for most asset reinvestment apart from Fire vehicles and buildings. A long term financial plan has not been developed.

Recognizing Natural Assets in the Highlands’ Asset Management Plan

The District’s natural assets, and the ecosystem services they provide, are a fundamental and integral part of the Highlands’ infrastructure.

The Municipal Natural Assets Initiative (MNAI) suggests this as a definition: ‘Natural assets refer to the stock of natural resources or ecosystems that is relied upon, managed, or could be managed by a municipality, regional district, or other form of local government for the sustainable provision of one or more municipal services.’ For example:

Municipal Water Service	Equivalent Ecosystem Service	Natural Capital Component
Drinking Water Supply	Aquifer Recharge	Aquifer and Source Water Area
Drinking Water Treatment	Water Purification Water Filtration	Wetlands, forests, vegetation Wetlands, forests, vegetation
Stormwater Management	Rainwater Absorption Rainwater Filtration	Wetlands, forests, vegetation Wetlands, forests, vegetation
Flood Mitigation	Rainwater Absorption	Wetlands, forests, vegetation

Natural assets provide clear advantages over engineered (or grey) infrastructure. They:

- are cheaper to operate and maintain, if not degraded;
- may provide “free” ecosystem services;
- do not depreciate if properly managed;
- are carbon neutral or even carbon positive.

Natural Asset Management is an evolving area in Canada and several British Columbia municipalities are beginning to incorporate natural assets into asset management systems. The District's work on the Groundwater Aquifer provides a good base to incorporate this natural asset into the District's Asset Management Plan.

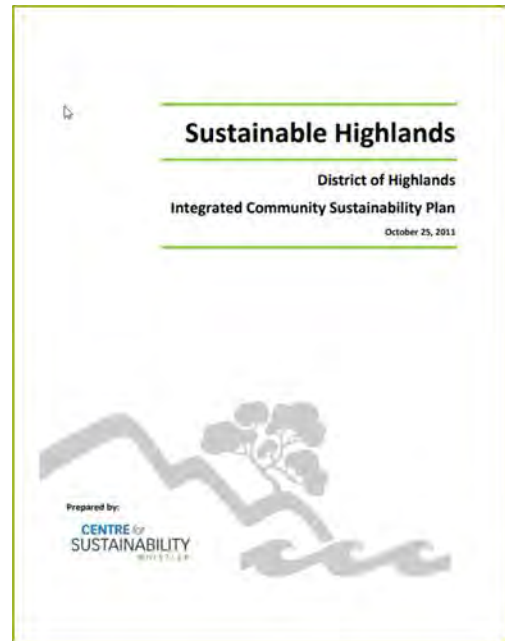
This supports the direction outlined in the District's Integrated Community Sustainability Plan.

Once further experience is gained, and capacity developed, additional natural asset groups such as Wetlands, Forest and Vegetation can be inventoried, assessed and managed as a further step.

The Municipal Natural Asset Initiative is currently sponsoring five pilot projects in this area.

Current State of Assets

As previously mentioned, basic levels of asset condition information have been maintained ranging from formal groundwater monitoring and bridge condition engineering assessments, annual road top reviews during maintenance activities to an informal annual assessment of equipment, playground structures and buildings by staff. Fire vehicles and equipment are maintained by the Fire Department.



Asset Group	Current State Information	Information Source
Groundwater Aquifer	Annual monitoring and assessment reports	Golder & Associates
Land	Basic condition information	Anecdotal
Road Base	No road profile testing conducting to date.	n/a
Road Top	Informal condition assessment during management of road maintenance contract	Road Contractor
Bridges	Annual Engineering Assessment	Herold Engineering
Buildings	Informal ongoing assessment	Anecdotal
Vehicles and Equipment	Staff assessments	Primarily Fire Department
Park Improvements	Informal ongoing assessment	Anecdotal

Since it is unrealistic to scientifically rate every asset for a high-level Infrastructure Condition Report, a simplified system is suggested and has been used for each asset component grouping. This is explained in more detail in the appendices. Assets are evaluated on a simplified component-by-component basis.

Although every rating system is subjective, this process improves accuracy since it incorporates the anecdotal asset knowledge of employees and contractors. The approach suggested is a combined assessment of 'Condition and Performance,' 'Capacity versus Need' and 'Funding versus Need'.

It is intended as a starting point and should be refined in subsequent years as better information is obtained. Using this method, the following base scorecard report was developed:

District of Highlands Infrastructure Report Card		
Asset Group	Rating	Comments
Land	B	Reasonable condition. No additional funding needed.
Groundwater Aquifer	B	Natural condition based on 2016 Golder and Associates Assessment. No additional funding needed.
Roads	C	Reasonable condition. Road profile assessment and PMP needed. Funding needed.
Bridges	B	Good condition based on Herold Engineering Assessment. Funding needed.
Facilities	B	Reasonable condition. Funding needed.
Park Improvements	B	Reasonable and natural condition. Modest increase in funding will maintain rating
Vehicles and Equipment	B	Reasonable condition. Modest increase in funding will maintain rating.
OVERALL	B	GOOD RATING. FUNDING NEEDED.

The second Stage is **Plan**. In the plan stage an Asset Management Policy is developed and used to prepare a set of Asset Management Plans and a Strategy. The Strategy is integrated with the District's Long Term Financial approach. This is normally a multi-year effort to integrate natural assets and reach sustainable reinvestment funding levels. The approach can be expected to evolve through the ongoing refinement of replacement cost estimates, better condition assessment and remaining useful life expectations.

PLAN

Asset Management Policy

A document that broadly outlines the principles and mandated requirements for undertaking asset management across the organization in a systematic and coordinated way, consistent with the organization's plans.

Asset Management Plan

Long-term plans that outline the assets, asset conditions, levels of service, asset and service risks, activities and programs for each service area and resources required to provide a defined level of service in the most cost effective way. Each Asset Management Plan is a readable and user-friendly living document that is continuously improved to incorporate new information or changing requirements.

Integrate to Long-term Financial Plan

Asset Management Plans are integral to a robust Long-Term Financial Plan and support **Sustainable Service Delivery**. This integration identifies gaps between long-term costs and available funding. The financial planning process identifies opportunities to close the gap through adjusting service levels (reducing costs) and/or increasing funding (raising revenue).



Asset Management Strategy

The high-level, long-term approach to asset management, including **Asset Management Plans** and objectives for managing assets.

*Asset Management BC – Asset Management for Sustainable Service Delivery – A BC Framework

Asset Management Policy

The District's Sustainable Asset Management Policy has been developed from the work undertaken by the Town of Gibsons and follows the approaches of the Municipal Natural Asset Initiative. The policy is attached as Appendix A and incorporates Natural Assets into the Asset Management Planning Process.

Asset Management Plans

To begin this work, high-level asset classification and numbering, condition assessment and long-term infrastructure replacement expenditure estimates have been developed where feasible. Further work to develop road top replacement through a Pavement Management Plan is suggested.

While the estimates can only be considered high level at this stage, they represent a starting point and provide a base for the direction proposed. Further work will be needed to refine the estimates, review condition assessments and reassess remaining useful life estimates of each asset category each year in preparation for annual budget discussions.

Plans have been developed for each asset category as follows:

- Land Assets Plan
- Groundwater Aquifer Natural Asset Plan
- Road Assets Plan
- Bridge Assets Plan
- Facility Assets Plan
- Park Improvement Assets Plan
- Vehicle and Equipment Assets Plan

To continue the work to incorporate natural assets the District may wish to also consider a Woodland and Drainage Natural Asset Plan in the future. This would be significant undertaking and beyond the capacity of the District at present.

Asset Management Strategy

The Strategy process is threefold:

- Develop capacity to do the work and entrench practices in regular business;
- Establish better information on which to base decisions;
- Establish a long term financial approach to sustainably maintain assets and services.

We believe that a gradual approach will enable the District to reach sustainable asset reinvestment levels over time and incorporate natural assets into the District's Asset Management regime.

This builds on the approach introduced by the District when it established a basic infrastructure replacement strategy as a component of its *Integrated Community Sustainability Plan - 5.2 Economy and 10 Work Strategy*. This is a very general mechanism for financial sustainability over the long term. The indicator used for this is the Reserve Contributions Ratio of ongoing annual reserve contributions to depreciation/replacement cost of municipal assets. This looks at the ability of the local government to take care of community assets.

The final step is **Implement**. This is where the newly developed Asset Management Strategy and Plans are put into practice and the District begins to measure and report out regularly through the budget and annual report process.

IMPLEMENT

Implement Asset Management Practices

Asset management practices establish and implement ways that integrate people, organizational culture and capacity. The implementation of these practices is guided by an **Asset Management Strategy** and the actions in **Asset Management Plans**.

Measure and Report

Annual and financial reports include asset management objectives and outcomes identified in an **Asset Management Strategy** and **Asset Management Plans**. Reporting demonstrates measurable progress in implementing the **Process** and achieving outcomes that contribute to **Sustainable Service Delivery**.



*Asset Management BC – Asset Management for Sustainable Service Delivery – A BC Framework

Implement Asset Management Practices

Asset management practices establish and implement ways that integrate people, organizational culture and capacity. The implementation of these practices is guided by the Asset Management Strategy, Asset Management Policy and Asset Management Plans. Some coaching assistance to help staff build knowledge and capacity to do the work will be needed.

Building good asset management practices into the everyday business of the District will naturally bring focus and priority to the management of natural and built assets in the municipality and ensure they are maintained for future generations:

- Consolidate existing asset information and TCA accounting records into a single database and prepare a consistent approach to categorizing and recording assets. A spreadsheet approach will be quite sufficient for this purpose;
- Regularly update asset information, replacement costs, condition assessments and useful life estimates;
- Update the Asset Management Plan each year in conjunction with Annual budget process.

Measure and Report

Annual and financial reports include asset management objectives and outcomes identified in an Asset Management Plan. Reporting provides transparency and accountability by requiring the publication of progress in implementing and achieving outcomes that contribute to Sustainable Service Delivery.

Making a commitment to measurement and reporting by including them in the District's Asset Management Policy will ensure that asset management remains a priority and becomes an everyday part of the District's operations.

After the adoption of the District's Asset Management Policy and Plans, suggested next steps to entrench asset management as an ongoing priority are:

- Incorporate Financial Disclosure Note in Audited Financial Statements;
This note will be included in the Annual Audited Financial statements to bring awareness to the value and importance of Natural Assets.
- Publish an Asset Condition Scorecard each year as part of the Community Annual Report;
This scorecard will provide accountability and help build awareness about the value of built and natural assets through an annual snapshot of the District's infrastructure.
- Reduce the existing standard municipal property tax rates and implement a separate Sustainable Assets Property Tax Levy to clearly identify infrastructure funding for taxpayers;
For example, the restated General Assets Property Tax Levy for 2017 would be \$21 and the Fire Specified Area Assets Tax Levy would be \$336. This clearly links property tax based funding with the asset management plan and provides a transparent means of accountability for the program.
- Reformat the Budget (Five Year Financial Plan) Document to directly link funding and expenditures to the Asset Management Plan.

3 ASSET MANAGEMENT STRATEGY

The District is well placed and has the basic capacity to undertake modest asset management as an ongoing corporate function. The District’s infrastructure is in reasonable condition and funding of a moderate proportion of average annual replacement needs is provided. More information about road base and road top is needed to determine the reinvestment levels needed to maintain roads in good condition indefinitely.

The focus of the District’s Asset Management Strategy is threefold: development of capacity, better information for decision making and a funding approach to reach sustainable financing levels.

Develop Capacity:

The District will need to obtain training or coaching assistance to begin the process of entrenching asset management in regular business. The Local Government Management Association ‘TeamWorks’ Program may be able to broker volunteer assistance from another municipality or modest consulting support could be contracted using the remaining funds already approved for asset management in 2017. Learning would be focused on implementing the principles of the Asset Management Policy and Program and then developing basic routines to keep the plan updated.

Better Information:

While capacity development occurs, better information should also be developed through the Pavement Surface profile Assessment and Pavement Management Plan. A consolidated Asset database should also be developed.

Financial Approach:

As capacity is developed and better information obtained about Pavement Management Planning, a long term financial approach can be developed to increase the District’s annual asset reinvestment over time.

The District owns assets valued at \$193 million with an average annual replacement cost of \$664,000.

Component	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement	Current Funding Level
Land	Indefinite	\$ 97 Million	\$ Not required	\$ Not required
Groundwater Aquifer	Indefinite	\$ 45 Million	\$ Not required	\$ Not required
Roads	15 to 80 Years	\$ 42 Million	\$ 250,000 (min)	\$ 20,000
Bridges	50 to 75 Years	\$ 1 Million	\$ 21,000	\$ 0
Facilities	50 plus Years	\$ 4 Million	\$ 156,000	\$ 117,000
Parks Improvements	25 to 75 Years	\$ 1 Million	\$ 5,000	\$ 0
Vehicles & Equipment	Varies	\$ 3 Million	\$ 232,000	\$ 215,000
Total		\$ 193 Million	\$ 664,000	\$ 352,000

The District currently commits \$352,000 in property tax supported funding per year for asset reinvestment as follows:

- transfers \$230,000 to reserves for fire equipment and building replacement and repays debt of \$60,000 from the District's Annual Fire Specified Area property tax. This is planned to increase to \$290,000 in 2027 when the current loan to purchase fire tender 2 and the Fire Hall expansion is paid out;
- Fire Turn Out Gear, Hose and SCBA equipment is replaced using an existing \$22,000 annual operating budget and \$20,000 capital budget;
- Ad Hoc Road Top patching, paving and crack sealing is provided as part of a \$20,000 road maintenance budget each year. *(The District also has committed \$100,000 per year from Road Reserves to complete road paving and other maintenance works. This is not a sustainable source of funding however.)*

This is equivalent to \$21 in General Property Taxes and \$336 in Fire Specified Area Property Taxes from the Average Homeowner in 2017.

This means that the District is currently funding just over 50% of average annual replacement needs from property tax revenues.

In practical terms, a gradual approach to increase the current \$352,000 level of capital investment to a minimum sustainable infrastructure replacement level (say \$664,000) will take time to achieve.

Once the District has clarified its Pavement Management Plan based annual road top requirements and the overall reinvestment target it could, for example, allocate gas tax funds to infrastructure replacement. Approximately \$140,000 in uncommitted gas tax funding is available each year for eligible capital work which includes road paving, though this fund has not traditionally been used for this purpose.

By doing this the District will have increased reinvestment from \$352,000 to \$492,000 or 74% of minimum.

The remaining \$182,000 per year, or as adjusted once Pavement Management Planning is developed, could gradually be built into the annual budget to reach the minimum sustainable funding level over a defined period. This does not commit future Councils to the funding increases but provides a policy approach to be considered each year.

A fifteen-year program of increased funding from taxation is being used by several municipalities throughout the Province of BC to gradually achieve this goal.

4 ASSET MANAGEMENT PLANS

4.1 LAND ASSETS PLAN

Component	Estimated Asset Life	Value at Historical Cost	Average Annual Replacement Cost
Land	Indefinite	\$ 96.70 Million	\$ n/a

Most of the District's land inventory is comprised of parks, trails, community areas and the land under roadways.

The District's primary municipal park is Twinflower Park, which has a tot lot playground, washrooms, a non-regulation size ball field, a bicycle jump and a horse-riding ring.

Eagles Lake Park features a small swimming beach and picnic area.

Hazlitt Creek Park is a 32-hectare nature park. Hazlitt Creek flows through the ravine and has some rough trails that provide access to the water. There is a wide easement trail that eventually leads to private property. The Park area is not maintained.

Bordered by private property on eight of its nine sides, Cal Revelle Nature Sanctuary is a 69-hectare natural area that abuts the Gowland-Tod Provincial Park to the west and northwest. Named after a former councilor of the Highlands, it includes Garry Oak, Douglas Fir, Arbutus and meadow lands. The area has old logging trails from the activity of early settlers. The Park area is not maintained other than occasional volunteer-based safety maintenance.

Caleb Pike Homestead is a 1.3-hectare heritage homestead site with several heritage buildings. Basic maintenance is organized by the District through a management agreement with the Highlands Heritage Park Society.

1150 Bear Mountain Parkway is a 19-hectare covenanted park area and unformalized trail system that is not maintained. A joint management plan with The Land Conservancy is expected.

An unnamed 19-hectare natural park area adjacent to Thetis Lake Park which is not maintained.

There are a variety of other small park access points, trails, land holdings and neighborhood park areas.

The park lands and trails are generally in natural condition with no known significant defects. Most remain in a natural state with no formal maintenance work.

No contaminated site obligations have been disclosed in the District's Audited Financial Statements in accordance with PSAAB Standard 3260.

Additional land inventory is acquired from time to time as community priorities are identified and as modest development activities involve the dedication of road, trail or other land to the municipality.

Land assets generally do not require significant reinvestment. Replacement values have been broadly estimated for the purposes for this report using a general average of \$300,000 per acre.

What Condition Are these Assets in?

Land Assets have an overall B rating. This rating indicates that the current land inventory is in generally good natural condition, performs to community standards and is sufficient for community needs.

Lands: A natural asset that does not require replacement. Monitoring and management to meet service expectations and be aware of climate change impacts is key. Ad hoc funding and volunteer effort is provided from time to time for basic maintenance activities as required.

Land Assets Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	A	
Funding vs. Need	A	

What needs to be done in the near term?

1. No specific reinvestment required.
2. Establish a volunteer based informal monitoring and assessment program.
3. Maintain volunteer based maintenance focus.
4. Confirm land inventory and combine database with TCA records.
5. Refine land replacement values and adjust Financial Statement disclosures.

4.2 GROUNDWATER AQUIFER NATURAL ASSET PLAN

Component	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement Cost
Wark -Colquitz Aquifer	Indefinite	\$ 45.0 Million Substitute cost	Not required if sustainably managed

The majority of the residential population of approximately 2,225 obtains potable water from private, individual water wells. A small number of individual residences obtain potable water from local streams and lakes under surface water licenses.

The Province of British Columbia has primary jurisdiction and regulates through the Water Sustainability Act, Water Sustainability Regulation and Groundwater Protection Regulation. Other regulatory initiatives are also in progress.

Integrated Community Sustainability Plan:

ICSP Statement 5.9.3. Human activities in watersheds are managed to maintain natural drainage systems so as to protect water quality, to optimize groundwater recharge, manage summer flows and to minimize runoff damage in long term (e.g. 100- year) flood scenarios.

ICSP Statement 5.9.4. The supply of potable water from local natural sources is maintained for future generations.

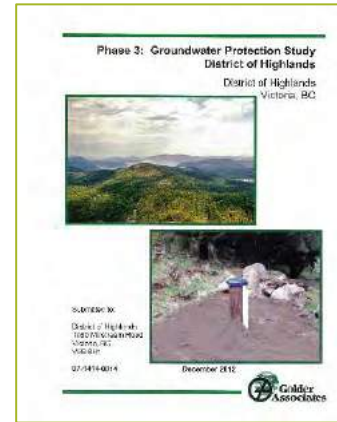
The District's groundwater supply is primarily dependent on drilled wells supplied from the Wark-Colquitz Aquifer. (Aquifer No 680 BC Ministry of Environment). This is a class IIB Aquifer under the BC Aquifer system which indicates moderate demand relative to aquifer productivity and moderate vulnerability of the aquifer to contamination from surface sources. (Golder and Associates 2016)

The District is proactive in the monitoring, assessment and regulation of groundwater. Education and awareness activities occur regularly. The District is keen to assess the impact of future demand and climate change on the groundwater resource.

Highlands Bylaw No. 154 outlines the standards for regulating the subdivision or development of land within the Highlands, including standards for sanitary sewage systems and standards for water service.

Golder and Associates has conducted groundwater level monitoring in the Highlands since 2009 in support of the District’s Groundwater Protection Study.

The latest report from Golder indicates that results from the 2015 groundwater monitoring program were generally consistent with the seasonal patterns reported for previous years. Water levels in the Highlands monitoring wells during the dry season of 2015 were within the range of those observed in previously monitored years (2010 – 2014).



Golder recommends that the groundwater monitoring program continue to assess seasonal patterns and long-term trends in groundwater levels across the Highlands, particularly for DOH-07B, which exhibited slightly lower water levels in 2015 compared to previous years. They also suggest that the results of stakeholder programs should also continue to be reviewed on an annual basis to monitor groundwater conditions in the southern portion of the Highlands where production wells are operated.

Climate change is expected to be the primary influencer on condition of groundwater resources.

Monitoring, demand management and climate change adaptation are suggested as the keys to effective management of this natural asset and avoidance of the cost to replace it with an engineered system.

What Condition Are these Assets in?

The Groundwater Aquifer has an overall B rating. This rating indicates that the groundwater aquifer is in generally good condition, performs to community standards and is sufficient for current community needs based on the most recent Golder and Associates Assessment.

Aquifer: A natural asset that does not require replacement. Monitoring, demand management and climate change adaptation is key. Funding is provided for monitoring.

Groundwater Natural Asset Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	B	

The substitute cost reflects the approximate cost of replacing the existing well system with a municipal piped water system using CRD Water, assumed to be supplied at Millstream Road at the south boundary of Highlands. The assumption is that the District's private onsite well system is rendered unsuitable for individual lot domestic use. A 'new' community piped system would require 2 pump stations, 5 pressure reducing stations, two reservoirs, and water supply/distribution mains on essentially all of the District's

existing road system (46 km's), plus supply lines to the reservoir sites, land costs for the reservoirs sites, and is estimated at approximately \$45 million dollars not including water services on private properties.

What needs to be done in the near term?

The District is committed to the sustainable management of this natural resource and has established an effective monitoring and reporting regime. Awareness and education work continues. The District recently updated Highlands Bylaw 154 which regulates the subdivision or development of land to better reflect this commitment.

Funding for replacement is not required if groundwater natural capacity is sustainably managed.

Staff and community resources are committed to the assessment process, education and awareness activities.

Work in the near term will focus on the following:

1. Continue the annual monitoring and assessment program with Golder.
2. Continue to assess Climate Change effects and adapt.
3. Proactively manage demand and quality control through education, awareness, policy and regulation.
4. Report out on Groundwater Natural Asset condition via the budget process, tax notices and Annual Community Report.

4.3 ROAD ASSETS PLAN

Component	Kilometers	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement Cost
Local	29.7	25 - 30 Years	\$ 10.6 Million	\$250,000 to \$350,000
Collector	6.3	20 - 25 Years	\$ 2.8 Million	
Major	10.5	15 - 20 Years	\$ 5.2 Million	
Road Base		75 Years	\$ 23.7 Million	\$Nominal
Total	46.5		\$ 42.3 Million	\$250,000 to \$350,000

The District's road system is comprised of 46.5 kilometers of major, collector and local level roads in a rural environment. Millstream Lake Road and Ross-Durrance Road were added to the District's Heritage Register in 2013 and are a 6.7 kilometer Transportation Act Section 42 road of heritage significance.

The road system is valued at a current replacement cost of \$42.3 million dollars. By maintaining the road top in good condition (for example an overall PAVI rating of 80 or better) the District can plan to maintain road base without significant replacement costs on an indefinite basis and therefore minimize future replacement cost for over \$23 million dollars of road base. This is a sound reinvestment strategy.

The level of annual reinvestment in road top maintenance is most effectively determined through a formal Pavement Management Plan based on comprehensive pavement surface profile data. While most of the District's roads are in good condition, this data has not been developed to date. By investing \$30,000 in a pavement surface profile assessment the District will be able to develop an accurate Pavement Management Plan.

In 2008 the District commissioned a report on road condition from JBR Highway Consulting. That report indicated that between 1998 and 2002, with assistance from the Province of British Columbia Newly Incorporated Territories Program, almost 50% of the District's roads (23 of 47 kilometers) were paved or overlaid with hot machine asphalt concrete. This included all the collector and local class A roads.

As such, there will be a significant 'bulge' in the repaving/surfacing requirements as this group of pavements essentially all age out at the same time. This has given the District some leeway in maintenance requirements over the first decade of this century, but will start to require additional maintenance in the coming years. The Pavement Management Plan will address this anomaly as it assesses the condition of the road surfaces.

The report also recommended that an annual hot mix resurfacing program of a minimum 1.6 kilometers per year should be established based on a useful life estimate of 30 years. In 2008 this was estimated at \$170,000 per year at \$10.625 per meter cost. Current resurfacing prices are in the \$15 range which would put the equivalent program at \$240,000 per year. Full replacement would be in the \$120 per meter cost range. Cracksealing, road base repairs and shoulder maintenance work would be in addition to that cost.

While a very substantial undertaking, the District should prepare to consider potential ongoing road reinvestment in the range of \$250,000 to \$350,000 per year in the future. While the District currently is using Road and some Gas Tax Reserves to maintain a \$100,000 program of annual road repair and upgrading work, the use of road reserves is not a sustainable source of funding.

This road surface profile assessment will assist in indicating if further detailed testing of any Transportation Act Section 42 road base is also needed. This area of road has been given heritage status by the District and parts may have been built using a corduroy road base technique that does require replacement at some point in time.

The combined data will help determine a plan for any potential replacement of poor condition road base in the future, like the current \$50,000 shoulder repair being undertaken on Millstream Lake Road.

In the interim a \$20,000 program of crack sealing, \$25,000 for shouldering and drainage repair and a general road contingency of \$30,000 will be sufficient to maintain road condition while the Pavement Management Plan is developed.

Many of the District's existing roads do not have any ditches or storm drainage facilities (such as curbs, or catch basins). In most cases, the road drainage infiltrates adjacent to the road surfaces, however there are many sections, particularly on the upstream side of roads with long sustained gradients, where no ditches have been provided, where the road drainage is trapped and travels along the road for a considerable distance. This often erodes and/or undermines the shoulder and road base, resulting in uneven shoulders and threatening the integrity of the road surface.

The District should consider explicitly funding the ongoing additional maintenance of these narrow shoulders, perhaps through the roads maintenance contract. This will serve to leverage the value of the road surface and reduce premature road failures along these sections. Consideration should also be given to providing methods of removing large quantities of water using cross drains or swales to reduce erosion in these sections.

The District should also consider providing technical capacity to assist in ongoing management of the paving assessment and annual upgrading programs. This could effectively be provided by the potential use of staff from neighboring Municipalities that could assist with these programs.

What Condition Are these Assets in?

The road system has an overall C rating. This rating is based on recent anecdotal assessments of road base and road top conditions by the District's roads consultant and in winter 2017 by our team in lieu of a formal Pavement Management Plan. Road top is generally in good condition. Only minor defects and deterioration is present in a few specific locations.

Road Base: Road base generally does not require replacement. Road base renewal usually occurs when other underground works or development improvements are being built.

Road Base Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	C	

The District has identified an area of Transportation Act Section 42 roads. Road base condition information is minimal. A pavement surface profile will provide an indication if further detailed road base assessment is needed. Some risk relative to drainage control.

Road Top: The optimal replacement frequency of road top should be managed through introduction of a Pavement Management Plan. This plan can be developed while a small program of crack sealing and drainage repair is maintained. Drainage maintenance also required.

Road Top Detailed Rating		
Condition and Performance	C	C
Capacity vs. Need	B	
Funding vs. Need	C	

What needs to be done in the near term?

1. Maintain annual funding for \$20,000 in crack sealing, \$25,000 in shouldering/drainage repair and a road contingency of \$30,000 (property taxation supplemented by reserves if needed).
2. Complete a pavement surface profile of most roads and determine if any section 42 road base requires further testing. Cost of up to \$30,000 funded from Gas Tax Reserve.
3. Establish a Formal Pavement Management Plan, refine funding estimates and the scorecard rating.
4. Provide staff resources to manage Pavement Management Plan
5. Increase annual road top reinvestment funding to move toward updated Pavement Management Plan recommended levels.
6. Update the Pavement Management Plan annually.
7. Update replacement cost estimates on an annual basis.
8. Incorporate new techniques, paving methods or technologies to ensure most efficient use of available funding.

4.4 BRIDGE ASSETS PLAN

Component	Kilometers	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement
Bridges		75 Years	\$ 0.75 Million	\$21,000

The District operates four small bridges (Bellamy, Corry, Edwards and Hanington) valued at a current replacement cost of \$750,000 dollars with an average annual investment of approximately \$21,000 required to replace them on a lifecycle basis.

Replacement of the first of the bridges is at least fifty years into the future, leaving significant time to accumulate funding.

Bridge maintenance is funded from time to time based on the recommendations from Herold Engineering. No replacement funding has been identified to date.

What Condition Are these Assets in?

The Bridge system has an overall B rating. This rating is based on the latest Herold Engineering assessment completed in 2017.

Bridges: bridges are in good condition and require regular maintenance to reach regular lifecycle replacement in approximately 50 years. Expansion of the structures in the interim is not expected.

Bridge Assets Detailed Rating		
Condition and Performance	A	B
Capacity vs. Need	A	
Funding vs. Need	C	

What needs to be done in the near term?

1. No significant bridge replacements are expected in the near term.
2. Increase annual reinvestment to move toward recommended \$21,000 level.
3. Continue to assess bridges on a regular basis as required for insurance purposes.
4. Update replacement cost estimates on a regular basis.

4.5 FACILITY ASSETS PLAN

Component	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement Cost
Municipal	70 years	\$ 0.50 Million	\$ 15,000
Fire Rescue	70 years	\$ 2.60 Million	\$ 117,000
Heritage	Not Replaceable	\$ 0.50 Million	\$ Volunteer Effort
Community Users	70 years	\$ 0.80 Million	\$ 24,000
Total		\$ 4.40 Million	\$ 156,000

The District's facilities are comprised of buildings that support local government business, fire rescue operations, heritage and community activities. They serve as base for fire rescue response, storage for records, historic documents, and specialized vehicles/equipment. They provide for recreation, community-based activities and a regional cultural identity. Major building repair and maintenance is managed on an ad hoc basis.

An Insurance policy is maintained to assist with the cost to repair/replace in the event of accidental damage.

The facilities are grouped into four categories:

- Municipal (District Office);
- Fire Rescue (East and West Fire Halls);
- Heritage (Caleb Pike Dairy, Schoolhouse, Teacherage, Museum, Caretakers Residence);
- Community Users (Community Hall and Garden).

Facilities are broadly valued at a current replacement cost of \$4.4 million dollars based on the most recent insurance valuation. Given the community commitment to volunteerism, Heritage buildings are assumed to be replaced with community volunteer effort and no replacement funding is identified. An average annual investment of approximately \$156,000 is estimated to renew the others.

Major building maintenance and repair funding is also required to ensure that full building lifecycles are achieved. A General Capital Reserve contribution of \$35,000 per year is used to fund a variety of projects including building component replacements such as plumbing and siding. This should be revaluated in context with an overall plan.

Full funding of \$117,000 to replace the East and West Fire Halls is in place. District office and community building funding would be an additional \$39,000 per year for a total of \$156,000 needed over time.

What Condition Are these Assets in?

Buildings have an overall B rating. This is a combined rating reflective of the mixture of individual building conditions, the unique nature of the uses and funding approaches (no significant replacement funding for municipal, heritage and community user buildings).

Municipal

The District Office was built in 2000 and is in good general condition. No planned maintenance program has been established to date. The need for additional capacity has been identified

Municipal - Detailed Rating		
Condition and Performance	B	C
Capacity vs. Need	C	
Funding vs. Need	C	

Fire Rescue

The West Fire Hall is twenty years old and in good condition. The East Fire Hall was recently constructed in 2015 and is in new condition. Full funding is in place for replacement.

Fire - Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	A	

Heritage

The Caleb Pike Homestead heritage site is in good condition given its vintage. The structures continue to be maintained in a manner respectful of their heritage nature.

Heritage - Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	B	

Community Users

The Community Hall was constructed in 2014 and is in new condition. No funding for replacement or planned maintenance has been identified.

External - Detailed Rating		
Condition and Performance	A	B
Capacity vs. Need	A	
Funding vs. Need	C	

What needs to be done in the near term?

1. Confirm policy approach for Heritage Buildings replacement – volunteerism.
2. Increase Replacement Funding from \$117,000 to \$156,000 sustainable level.
3. Establish a major building repair and maintenance program. (Annual cost unknown at present).
4. Reevaluate cost factors and useful life estimates each year.
5. Continue to innovate new technology approaches to ensure most efficient use of funding.

4.6 PARK IMPROVEMENT ASSETS PLAN

The District’s primary active municipal park is Twinflower Park, which has a tot lot playground, washrooms and a fieldhouse, a non-regulation size ball field, a bicycle jump and a horse-riding ring. The other primary active recreation park is Eagles Lake.

Eagles Lake features a small swimming beach and picnic area. One of the unique features of the lake is a cob washroom with a composting toilet which was built by volunteers. The washrooms feature the building techniques used in cob construction and a living roof.



Parks improvements are valued at a current replacement cost of \$500,000 dollars with an average annual investment of approximately \$5,000 required to renew on a lifecycle basis.

A Management Plan will be developed with the Land Conservancy for the 19 hectare unformalized trail system off 1150 Bear Mountain Parkway. This may envision further trail work.

Significant community volunteer effort has contributed to the development of many park improvements and this is assumed to continue for the purposes of this plan.

Component	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement Cost
Sport Fields	25 years	\$ 0.20 Million	\$ Volunteer Effort
Playgrounds	30 Years	\$ 0.02 Million	\$ 1,000
Washrooms	75 years	\$ 0.08 Million	\$ 1,000
Parking Areas	50 years	\$ 0.16 Million	\$ 3,000
Trails	TBD	\$ 0.10 Million	\$ Volunteer Effort
Total		\$ 0.56 Million	\$ 5,000

What Condition Are these Assets in?

Park Improvement Assets have an overall B rating. Park improvements are in good and/or natural state condition and require little priority work. Replacement of some ageing amenities and accesses will improve condition ratings over time.

Sport Fields: The Twinflower sport field is in good condition as it was upgraded in partnership with Westshore Parks & Recreation and requires no significant renewal work now. For purposes of this plan, field work is assumed to be provided by community volunteer effort.

Detailed Rating		
Condition and Performance	C+	C
Capacity vs. Need	C	
Funding vs. Need	C	

Playgrounds: The Twinflower Park tot lot playground, bicycle jump and riding ring are in reasonable condition. Fencing was replaced in 2016.

Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	C	

Washrooms: The Twinflower Park washroom and cob washroom at Eagle Lake are both in good condition.

Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	C	

Trails and Accesses: Most trails are in natural state condition. No significant trail maintenance is funded. Trail work, if any, is community based.

Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	B	

Parking Areas: All parking areas are in good general condition.

Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	B	

What needs to be done in the near term?

1. No significant asset replacement is needed in the near term.
2. Confirm sport field and trail replacement policy (community volunteer).
3. Establish modest replacement funding of \$5,000 per year for this asset category.
4. Reevaluate cost factors and useful life estimates each year.
5. Continue to innovate new technologies and approaches to ensure most efficient use of funding.

4.7 VEHICLES AND EQUIPMENT ASSETS PLAN

Component	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement Cost
Fire Vehicles	20-25 Years	\$ 2.48 Million	\$ 173,000
General Vehicles	15 years	\$ 0.03 Million	\$ 2,000
Fire Equipment	Varies	\$ 0.68 Million	\$ 42,000
General Equipment	Varies	\$ 0.16 Million	\$ 15,000
Total		\$ 3.35 Million	\$ 232,000

The District operates a Fire fleet of vehicles for public safety use and a pickup truck for general administrative use. A variety of fire turn out gear, self-contained breathing apparatus (SCBA) and hose equipment is also maintained. A variety of furniture, technology and equipment is used in several locations. Access gates and signs are included in this category as well.

What Condition Are these Assets in?

Vehicles and Equipment have an overall B rating. This is a combined rating reflective of the condition mixture of vehicle fleet, information technology and other equipment.

Vehicles: Fleet vehicles are in reasonable condition and full funding is in place for the existing Fire fleet and the equipment located on the vehicles. Significant replacements in the near term include the general use administrative Pickup Truck, Fire Engine 2 in 2020 and Fire Tanker 2 in 2025.

Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	A	

Equipment: Fire Turnout Gear, SCBA and Hose is replaced on a regular cycle with funding from the fire operations and capital budgets. Information Technology is replaced on a relatively regular cycle. Furniture and access gates are replaced on an as needed basis. No regular replacement funding has been established for general equipment and technology replacement.

Detailed Rating		
Condition and Performance	B	B
Capacity vs. Need	B	
Funding vs. Need	C	

What needs to be done in the near term?

1. Replace vehicles and equipment on lifecycle basis - replace Pickup truck and Fire Engine 2.
2. Increase average annual replacement at sustainable levels to \$232,000. This is a \$17,000 increase for general equipment.

-
3. Increase fire equipment replacement funding each year by inflation (say 2% per year).
 4. Refine inventory information, replacement values, remaining useful life estimates and detailed condition assessments each year.
 5. Right size vehicles and equipment wherever possible.
 6. Continue to innovate new technology approaches to ensure most efficient use of available funding.

5 APPENDICES

DISTRICT OF HIGHLANDS

POLICY AND PROCEDURES

TITLE:	Asset Management Policy		
SECTION:		POLICY No.	
Adopted:		Resolution:	
Amended:		Resolution:	

1. VISION AND PURPOSE

The purpose of this policy is to set guidelines for implementing consistent Asset Management processes within the District of Highlands.

The vision for the community includes providing a safe, livable and sustainable community with well managed and maintained infrastructure assets. These assets include the Wark-Colquitz Aquifer, efficient transportation networks, public safety vehicles and equipment, information technology systems, and accessible parks, community and civic facilities.

The District of Highlands is committed to implementing a systematic Asset Management methodology 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 District's priorities.

The District of Highlands owns and operates \$51 Million of Engineered Assets to support delivery of service to the community.

Although the equivalent values have not been fully established, the District also recognizes the additional and significant contribution made by Natural Assets in the delivery of service to the community.

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

2. TERMS

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.

Engineered Assets: assets that have been constructed and are owned by the District (e.g. roads, buildings and vehicles), land that is owned by the District and supports assets (e.g., land under roads or buildings), or land that is undeveloped and owned by the District. These assets must be operated, maintained, managed, and, apart from land, ultimately replaced as they wear out.

Natural Assets: naturally occurring land or subsurface features which perform or support service delivery to the District (e.g., the Wark-Colquitz Aquifer which filters and stores water, woodlands and the creeks which convey and treat storm water 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 bridge structure may have a high likelihood of failure and the consequences 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.

Level of Service: the service level delivered to the public by the District. This can take the form of the selection of services that are provided (e.g., bike lanes, doggie bags, or a new community hall), 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 road sweeping or line painting). The desire of Council or the public for a particular Level of Service will directly affect taxation.

3. OBJECTIVES

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

- Maintaining assets in the most natural, energy-efficient and reliable manner that costs the least to operate over the life cycle of the asset;
- Managing District of Highlands Engineered and Natural Assets by implementing appropriate Asset Management strategies and appropriate financial resources for those assets;
- Fostering an environment where all District of Highlands employees take an integral part in overall management of District assets by creating and sustaining Asset Management awareness throughout the organization through training and development;
- Continually seeking opportunities for improving efficiencies in operations, maintenance and asset replacement practices;
- Demonstrating transparent and responsible Asset Management processes that align with established best practices; and
- Meeting legislative requirements for Asset Management.

4. PRINCIPLES

- A consistent Asset Management Strategy will be used for implementing systematic Asset Management leading practices;
- Natural Assets are recognized by Council as performing essential service delivery and will be identified and managed in a similar manner as Engineered Assets;
- Asset Management plans will be developed and maintained for major service/asset categories. The plans will be informed by community consultation and financial planning and reporting;
- An inspection and condition assessment regime will be used to ensure agreed service levels are maintained and to identify asset renewal priorities;
- Asset renewals and levels of service will form the basis of annual budget estimates;
- Training in asset and financial management will be provided for relevant staff.

5. SCOPE

This policy applies to all District of Highlands activities.

6. LEGISLATION

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

7. RELATED DOCUMENTS

Asset Management Strategy and associated Asset Management Plans. Integrated Community Sustainability Plan, Official Community Plan.

8. RESPONSIBILITIES

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

8.1. Council is responsible for:

- adopting this Asset Management Policy and future updates;
- allocation of resources;
- providing high level oversight of the delivery of the District's Asset Management Strategy; and

8.2. The Chief Administrative Officer is responsible for:

- developing Asset Management strategies, plans, and procedures;
- 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;
- establishing financial plans for consideration by Council that will ensure stable, long-term funding for replacement, renewal and/or disposal of assets;
- ensuring that the most up to date information on the District's Natural and Engineered Assets is gathered and maintained;
- using industry standard unit costs and service lives for all infrastructure components, considering variations due to unique local conditions;
- 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 District assets; and
- valuing and depreciating assets in accordance with appropriate best practices.

9. REVIEW DATE

This policy has a life of 3 years. It will be reviewed in 2021.

5.2

Appendix - Financial Statement Disclosure Note for Natural Assets Recognition

This note will be included in the Annual Audited Financial statements to bring awareness to the value and importance of Natural Assets.

No Formal Public-Sector Accounting Standard exists for the valuation of Natural Assets to date; however, this is an active policy discussion area for the national standard setting organization.

Financial Statement Recognition

"The District is fortunate to have many natural assets that reduce the need for built infrastructure that would otherwise be required. This includes the Wark-Colquitz aquifer (water storage and filtration), creeks, ditches and forestlands (rain water management) and the foreshore area (natural seawall). Canadian public-sector accounting standards do not allow for the valuation and recording of such assets into the financial statements of the District. As such, these natural assets are not reported in these financial statements. Nevertheless, the District acknowledges the importance of these assets and the need to manage them in conjunction with built infrastructure."

5.3 Appendix - Asset Report Card

Like many municipalities across Canada, the District faces the challenge of ageing infrastructure that was constructed with significant financial support from senior levels of government and is now the responsibility of the local community.

The Infrastructure system has an overall **B** rating.

District of Highlands Infrastructure Report Card		
Asset Group	Rating	Comments
Land	B	Reasonable condition. No additional funding needed.
Groundwater Aquifer	B	Natural condition based on 2016 Golder and Associates Assessment. No additional funding needed.
Roads	C	Reasonable condition. Road profile assessment and PMP needed. Funding needed.
Bridges	B	Good condition based on Herold Engineering Assessment. Funding needed.
Facilities	B	Reasonable condition. Funding needed.
Park Improvements	B	Reasonable and natural condition. Modest increase in funding will maintain rating
Vehicles and Equipment	B	Reasonable condition. Modest increase in funding will maintain rating.
OVERALL	B	GOOD RATING. FUNDING NEEDED.

The condition ratings are positive and indicate that most assets are in generally good condition. A deterioration in condition over time is projected if funding levels remain the same as in 2017. If funding levels are improved in line with recommended sustainable levels, then overall condition ratings will be maintained or slightly improve over time.

5.4 Appendix - Financial Position

Infrastructure systems need funding that is dedicated, indexed, long-term, and most importantly sustainable. The primary measure is the amount of funding provided versus the estimated funds needed to meet or maintain the community's desired quality or performance standard.

The District owns assets with a value of \$193 million dollars with estimated asset lives of between 15 and 80 years and a high-level estimated annual average replacement cost of \$664,000 dollars per year.

Component	Estimated Asset Life	Value at current replacement cost	Average Annual Replacement	Current Funding Level
Land	Indefinite	\$ 96.70 Million	\$ Not required	\$ Not required
Groundwater Aquifer	Indefinite	\$ 45.00 Million	\$ Not required	\$ Not required
Roads	15 to 80 Years	\$ 42.30 Million	\$ 250,000(min)	\$ 20,000
Bridges	50 to 75 Years	\$ 0.75 Million	\$ 21,000	\$ 0
Facilities	50 plus Years	\$ 4.40 Million	\$ 156,000	\$ 117,000
Park Improvements	25 to 75 Years	\$ 0.56 Million	\$ 5,000	\$ 0
Vehicles and Equipment	Varies	\$ 3.35 Million	\$ 232,000	\$ 215,000
Total		\$ 193.06 Million	\$ 664,000	\$ 352,000

The District currently commits \$352,000 in property tax supported funding (Highlands Fire Service Specified Area Property Tax and the General Property Tax Levy) per year for asset reinvestment as follows:

- transfers \$230,000 to reserves for fire equipment and building replacement and repays debt of \$60,000 from the District's Annual Fire Specified Area property tax. This will increase to \$290,000 in 2027 when the current loan to purchase fire tender 2 and the Fire Hall expansion is paid out;
- Fire Turn Out Gear, Hose and SCBA equipment is replaced using an existing \$22,000 annual operating budget and \$20,000 capital budget;
- Ad Hoc Road Top patching, paving and crack sealing is provided as part of a \$20,000 road maintenance budget each year.

The District has accumulated capital reserves of approximately \$1.4 million for asset renewal. Funding is transferred to these reserves each year and used to manage the replacement of assets. Approximately \$100,000 of Road and Gas Tax Reserves funding has recently been used each year to repair road surfaces.

This means that the District has modest reserves accumulated and is funding just over 50% of minimum sustainable infrastructure replacement need.

The Government of Canada has established the Infrastructure Canada – Building Canada Gas Tax Fund which currently provides a contribution to Highlands of \$140,000 per year for infrastructure. This program is assumed to continue for purposes of this plan.

Senior levels of government occasionally provide grant funding for specific projects; however, these cannot be relied upon as a stable source of funding. Examples include the Green Municipal Fund and Build Canada Fund. No funding from these grants is assumed but will be included from time to time on an individual basis if awards are made.

Some building and park assets are assumed to be replaced through community volunteer effort and these are incorporated into individual asset plans.

While these estimates can only be considered high level at this stage, they represent a starting point and provide a base for the direction proposed. Further work will be needed to refine the cost estimates, review condition assessments and reassess remaining useful lives in each asset category each year, in preparation for annual budget discussions and regular revision of the District's sustainable funding requirements.

5.5 Appendix - Sustainable Highlands Decision Framework

Sustainable Highlands Decision Making Framework

An Integrated Community Sustainability Plan is the community’s highest level policy and guides decision-making at all levels. Ultimately, the vision articulated in the ICSP is implemented through daily decision-making. Below is a worksheet that outlines four strategic questions to help assess any type of action, (plan, policy, project, research, procurement, practice new or old) by using the **Sustainable Highlands** sustainability framework to inform decision-making. For a more comprehensive and user-friendly version of this tool, visit the www.highlands.bc.ca/sustainability web page.

NAME OF PROPOSED ACTION: **Asset Management Plan**

BRIEF DESCRIPTION OF THE ACTION: Develop an Asset Management Plan and incorporate Groundwater Aquifer natural asset in the plan.

DATE: **December 2017**

REVIEWED BY: CAO

1 DOES THE ACTION MOVE HIGHLANDS TOWARDS OUR SHARED VISION OF SUCCESS?

Indicate the top **Sustainable Highlands** Strategy Areas that the action supports:

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> 1. Buildings and Sites | <input type="checkbox"/> 2. Economy and Work | <input type="checkbox"/> 3. Education and Leisure |
| <input type="checkbox"/> 4. Energy | <input type="checkbox"/> 5. Food | <input type="checkbox"/> 6. Healthy Community |
| <input checked="" type="checkbox"/> 7. Land Use and Natural Areas | <input checked="" type="checkbox"/> 8. Transportation and Mobility | <input checked="" type="checkbox"/> 9. Water and Waste Systems |

Which main Descriptions of Success would the action move us toward?





Are there any Descriptions of Success that the action may move us away from?

1. Integrated Community Sustainability Plan success factors for Water and Waste Systems 5.9.2, 5.9.3 & 5.9.4	1. None
2. ICSP Success Factors for Buildings and Sites 5.1.4, Economy and Work 5.2.10 & Healthy Community 5.6.6	2.
3. ICSP Success Factors for Land Use and Natural Areas 5.7.9 & Transportation and Mobility 5.8.1	3.

How could we maximize the positive impacts of the action?	How could we avoid or minimize these potential negative impacts of the action?
1. Maintain commitment to Asset Management Approach over the long term	1. Regular Community Engagement
2. Ensure staff capacity and priority to manage the Plan	2. Keep the plan current and reassess regularly
3. Add natural assets over time	3. Continue to innovate approaches

2 DOES THE ACTION MOVE HIGHLANDS TOWARD OUR SHARED SUSTAINABILITY OBJECTIVES?

To reduce and to eventually eliminate Highlands' contribution to:

	Toward Quickly	Toward Slowly	Neutral	Away	If 'away,' how could you avoid or minimize this?
 Ongoing build-up of substances (scarce metals, fossil fuels) taken from the earth's crust.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
 Ongoing build-up of toxic substances produced by society.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
 Ongoing degradation of natural systems by physical means.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
 Undermining the ability of people to meet their human needs.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3 DOES THE ACTION PRESENT A FLEXIBLE PLATFORM FOR FURTHER MOVEMENT TOWARDS A SUSTAINABLE HIGHLANDS?

Eventually the Highlands will need to **eliminate** the contribution to the four unsustainable practices above. In general, choosing actions that are as flexible as possible will help you avoid dead end situations that might prevent you from reconciling short term tradeoffs and fully meeting your sustainability objectives. If technical or economic conditions change in the future, investments in flexible solutions will help ensure that these changes do not bring overly punitive costs and do not limit our ability to adapt.

Use the space to the right to indicate how your action incorporates long-term flexibility.

The action incorporates long-term flexibility by:

Asset Management Plan is designed to be flexible and can be refined or adjusted annually to ensure the approach reflects the changing priorities, resources and capacity of the community.

4

DOES THE ACTION PRESENT A GOOD FINANCIAL INVESTMENT?

	Capital: \$		Operating: \$/year	
What is the approximate cost of the action?	TBD by Council each year per Budget		Staff capacity, some consulting assistance	
Does this action reduce long term operating costs/ have a strong return on investment?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
If so, what is the approximate associated pay-back period for the investment?	Years: Undetermined			
Have non-market costs been considered in your decision making?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
Are there financial costs to other stakeholders or citizens from the implementation of this action?	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No

Given your assessment of the benefits, challenges and long-term costs associated with this action, what is your level of comfort with moving forward?

<input checked="" type="checkbox"/>	Strongly support this action
<input type="checkbox"/>	Support in principle, but support will depend on how the action is executed
<input type="checkbox"/>	On the right track, but more information and/or substantial changes are required. Currently, not comfortable supporting this action.
<input type="checkbox"/>	The action as proposed is not supportable.

5.6 Appendix - Basis and Assumptions

Assumptions and Understanding

A: Condition Assessments

Since it is unrealistic to scientifically rate every asset for a high-level Infrastructure Condition Report, a modified American Society of Civil Engineers (ASCE) alphanumeric system was employed for each asset component grouping based on the method developed by the City of Hamilton. Assets are evaluated on a simplified component-by-component basis. Although every rating system is subjective, this process improves accuracy since it incorporated the anecdotal knowledge of the employees with respect to the assets.

The assets (by individual components) are rated using a three-step process to ensure consistency, focus, and detail:

1. The first step is a rating of current condition in order to start understanding the makeup of the overall rating and identifying what the potential problems the managers were facing.
 - Condition and Performance
 - Capacity versus Need
 - Funding versus Need

Condition and Performance: This first criterion characterizes the current physical condition of infrastructure. The condition index scale below is a general guideline for grading under this category:

- A = Excellent: No noticeable defects. Some aging or wear may be visible.
- B = Good: Only minor deterioration or defects are evident.
- C = Fair: Some deterioration or defects evident, but function not significantly affected.
- D = Poor: Serious deterioration in at least some portion of the structure.
Function is inadequate.
- F = Failed: No longer functional. A general failure or complete failure of a major structural component.

Capacity versus Need: For most infrastructure categories, this second criterion relates to the demand on a system, such as volume or use, versus its design capacity. This is a critical evaluation criterion for municipalities that are facing ongoing population and community growth. It is also important because an asset may be in excellent condition and performing well, but it is simply too small to meet the needs. A grading scale in 10-percent increments is suggested as a guideline for purposes of intuitive assessment as follows:

- A = systems that can support > 100% of demand
- B = systems that can support 90 - 99% of demand

-
- C = systems that can support 80 - 89% of demand
 - D = systems that can support 70 - 79% of demand
 - F = systems that can support less than 70% of demand

Funding versus Need: The third evaluation criterion reflects the status of funding dedicated to:

- a. Maintaining, replacing and improving the current condition of existing infrastructure, and/or;
- b. Building new infrastructure that is needed to keep up with growth (where development charges may not be applicable or may be difficult to define).

Infrastructure systems need funding that is dedicated, indexed, long-term, and most importantly sustainable. The primary measure is the amount of funding provided versus the estimated funds needed to meet or maintain the community's desired quality or performance standard.

Dedicated funds, such as user fees and development charges, need to be applied only to infrastructure systems for which they are raised. Indexing means that funds need to increase as the use of the system increases, or as the cost of providing the service increases. Maintenance and construction costs also need to be considered in the evaluation of funding. Steady funding provides for maintenance that extends the life of infrastructure. Long-term, multi-year funding plans should account for growth estimates so that projects can be designed and constructed in anticipation of needs where it is logical and feasible to do so, and not simply in reaction to inadequate capacity or problems caused by poor maintenance. Again, a grading scale in 10 percent increments is used as a guideline for purposes of intuitive assessment as follows:

- A = 90 to 100% of need
- B = 80 to 89% of need
- C = 70 to 79% of need
- D = 60 to 69% of need
- F = under 40% of need

Qualitative information collected through the review process can also be incorporated into the grading process.

- 2. The second step is to combine the detailed rating into a single blended rating that represented the overall score of that component, and then totaled into an overall score for the asset class for purposes of the Report Card.
- 3. The last step is a Report Card Rating is then assigned to each asset category based on a consolidation of Condition & Performance, Capacity vs. Need and Funding vs. Need criteria.

B: Cost Estimates

4. The District's Tangible Capital Assets Inventory has been used as the base for the plan. This inventory was assumed to be materially complete.
5. The District's Replacement Cost Estimates and Useful Life Estimates have been used. These are assumed to be substantially current for the purposes of this plan.
6. The District's replacement cost estimates have been supplemented with insurance valuation information, engineering bridge replacement estimates and local road paving cost information where available.
7. An Inflation factor of 3% for Fire Equipment/Buildings and 2% for General Assets has been used to develop future replacement costs.