To: Rob Buchan  
Chief Administrative Officer  

Date: January 27, 2015

From: Theresa Flynn  
Director of Financial Services  

File No. 1800

Re: Infrastructure Replacement Gap Analysis

RECOMMENDATIONS:

That Council receive this information for 2015 budget deliberations.

STRATEGIC PLAN IMPLICATIONS:

Strategic Priority No. 5: Ensure strong leadership, fiscal responsibility and transparent government.

PURPOSE:

To review the District’s infrastructure and determine whether the current funding is adequate to replace the infrastructure in the future and help determine a strategy to reduce the gap to start in 2015.

BACKGROUND:

Asset Management

Asset Management is a systematic process of deploying, operating, maintaining, upgrading and disposing of assets. In other words, it is a long range plan which covers each asset throughout its life and eventual disposal.

The District has always performed some Asset Management but haven’t always funded the full cost of replacement of those assets. Recent changes in financial reporting (Tangible Capital Assets) that require us to amortize the cost of the asset over its useful life, instead of expensing the full purchase in the year that the asset was acquired, has renewed focus on the financial aspects of asset consumption and funding for replacements.

This report will focus on the financial aspects of funding replacement of the District’s existing assets. It will not deal with operating costs and major improvements/repairs which extend the useful life of assets. The replacement strategy will evolve over time as staff continue to work towards developing a comprehensive asset management plan.

Infrastructure gap & funding

The Infrastructure gap is the gap between what is currently being saved for an asset’s replacement and what funding is actually needed to replace the asset. The District’s major infrastructure is the Water Distribution system, Sewer Collection system, Storm Drainage
system and Roads. These are the District’s largest and most costly assets. Other assets have been included in this report to look at the District’s overall funding of asset replacement.

Funding in the past has been done by reserves (savings); external debt; grants (from senior levels of government); developer contributions; or a combination of these methods. Using debt for replacement is more costly then saving in advance and there is a legislative limit on the amount the district can borrow. Grants from senior levels of governments are not guaranteed and are usually given on a matching fund basis.

**DISCUSSION:**

This analysis looks at two funding levels – funding amortization; and funding remaining present value.

By funding the amortization the annual cost/use of that asset is being expensed to the year it is used and those costs are put into a reserve for its eventual replacement. This method is useful for new assets but will not be sufficient for older assets that haven’t been funded fully in the past. This is the minimum that should be putting away for asset replacement. For new assets this method assumes that the interest earned on the reserves should cancel out any inflationary increases in replacement costs.

Funding remaining present value is calculated by taking the calculated present value divided by the remaining life of the asset. Again, it is expected that the interest earned will cancel out any inflationary increases. This is the optimum 100% funding model for older assets but this method doesn’t take into consideration potential grant funding in the future. This level of funding will be difficult to reach and if grant funding is available in the future may result in too much savings.

The assumptions when looking at infrastructure replacement costs in this analysis are:

- Historical costs are used to estimate present value
- Estimated Fair market value was calculated for some of the major Infrastructure assets using
  - 1.5% per year for interest earned on the reserve balance
  - 3% inflation per year to adjust historical costs to present value
  - 1.5% inflation used for vehicles and equipment
- Useful life for water and sewer mains is 80 years; water PRV stations 25 years; sewer lift stations 25 years; buildings 50 years; vehicles 8 to 20 years; roads 15 to 30 years; and equipment 3 to 10 years
- Interest earned on the reserve balances will offset inflation increases
- Assets will be replaced based on their useful life, but some will need to be replaced sooner and others will have their useful life extended.

Each category of assets and the funding for those assets is evaluated separately. Water and Sewer are not funded by general taxes but by user fees and parcel taxes.

**Water Distribution System Assets**

In 2011, a Reserve Funding strategy was started for Water. As the debt parcel tax decreased, funding for the Reserve was increased. Total of both were to equal to a $100. By 2013, the full $100 was going to the Water Infrastructure Reserve. There is now $1.3 million in this reserve which was started in 2011.
Data used in the Water Distribution system analysis is as follows:

- **Historical cost**: $10.5 million
- **Amortization**: $176,000
- **Present value of assets**: $24.8 million
- **Fair Market estimate**: $36.8 million
- **Funding source**: $100 parcel tax
- **Annual funding**: $490,000 (increases with number of lots)
- **Useful life**: 80 years main; 25 years PRV stations
- **Major replacement**: $13 million estimated in 2045 (30 years)

Under the current funding the reserve will not go into deficit until well after 50 years. Current funding of $490,000 is more than the minimum $176,000 for covering the amortization but short of funding using the present value calculation. Staff suggest that Council may wish to consider in 2020 an increase of 1% in the funding per year which will reduce the gap as seen below.
Storm Drainage System

Data used in the Storm Drainage system analysis is as follows:

- Historical cost: $4.6 million
- Amortization: $59,000
- Present value of assets: $9.8 million
- Fair Market estimate: $17.8 million
- Funding source: Property Taxes
- Annual funding: $100,000
- Useful life: 80 years
- Major replacement: $16 million estimated in 2065 (50 years)

A $20,000 per year increase in funding starting in 2015 will reduce the gap as seen in the graph below. Optimum funding will be reached by 2025.
Sewer Collection System Assets

Data used in the Sewer Collection system analysis is as follows:

- Historical cost: $26.8 million
- Amortization: $536,000
- Present value of assets: $35.5 million
- Fair Market value: $49.3 million
- Funding source: Sewer user fees
- Annual funding: $100,000
- Useful life: 80 years
- Major replacement: $6 million 2046 & $12 million 2064

Sewer area mains have been funded with debt in the past with each area paying for their infrastructure debt with a parcel tax. There are two debts outstanding for the sewer infrastructure. The South East Quadrant debt is approximately $1.67 million at the end of 2014 and has four years remaining until it is retired in 2018. Funding for this debt is from parcel tax which is now at $561.40 per year per parcel. Deep Cove/Pat Bay/McDonald Park debt is at $6.2 million at the end of 2014. Funding is from parcel taxes of $1201.95 per year per parcel and it is expected to be paid off in 18 years at the end of 2032.

An option for Council to consider is a 1% increase in reserve funding in 2015 (0.1% rate increase) be added and that funds from any increase in number of users go towards funding the gap. The graphs show only the 1% strategy. The suggestions in this report are only a start as further funding will be needed as shown by both graphs.
Sewer - 1% increase per year

Road Assets

Information for roads used in the analysis is as follows:

- Historical cost: $31 million
- Amortization: $984,000
- Funding source: Property taxes
- Annual funding: $370,000
- Useful life: 15 to 30 years

The District has an annual paving, overlay and crack sealing program and review in 2014 determined that this program has been effective in keeping our Road Assets in good shape.

Staff are satisfied that funding levels have been sufficient to maintain this asset and do not anticipate the need for any increase this year or in the near future.

Vehicles

Inflation rate used for the calculation is 2% for vehicles and equipment. Fire Services vehicles annual funding is $80,000. It is recommended to increase the annual funding $20,000 to avoid a deficit in the reserve.

Public Works vehicles and equipment funding is $90,000 annually. The reserve is expected to go into a deficit by 2024. By increasing the funding starting in 2015 by $20,000 the deficit will be reduced.
The funding for Utilities vehicles and equipment is $50,000 from each water and sewer fund. No increases to funding is needed at this time.

**Parks**

Parks vehicles and equipment (trucks, mowers) are funded out of the Public Works Vehicle and Equipment reserve. Any new parks purchases are funded from the Parks Acquisition Reserve. This reserve has $125,000 in it and is funded from two sources – annual funding of $14,300 a year as well as any funds from the sale of any parkland.

Funding of park improvements and equipment needed for parks is $55,000 a year. Currently there is $121,000 in two reserves. If major upgrades or repairs to existing parks and trails are needed the funding will need to be increased.

It is recommended to increase the funding of parks improvements and equipment by $20,000 (0.2% tax increase) in 2015 and another $20,000 in 2016. A review of projects planned for the next five years would be necessary to see if additional funding is needed beyond the recommendation.

**Building Assets**

There are three funding needs for the district’s building assets – annual maintenance, major repairs to extend the life of the building and replacement costs.

All three of the funding needs should be analyzed prior to any changes in funding. Currently only the analysis of the Denham Till house is completed. The Wain Road Fire Hall expansion was funded from debt and a replacement funding strategy can begin after the debt is paid off. There are no other recommendations at this time for the 2015 budget.

**Other Minor Assets**

Currently there is $70,000 per year going into the Office Equipment reserve. In the past five years equipment and software has been added such as training computers in the Wain Road Fire Hall in 2014 but no funding increase have been made. The reserve is expected to go into a deficit within 5 years. An increase of $10,000 per year will reduce the deficit.

There are two Fire Equipment reserves which have a total annual funding of $25,000 per year. The total in both reserves is $21,000. These reserves are set aside for first responder
equipment as well as equipment for the fire hall. A funding increase of $10,000 per year is recommended for 2015.

**FINANCIAL IMPLICATIONS:**

Property taxes would increase 1% in 2015 if all the strategies funded from property taxes are started. The Sewer Reserve option would be started in 2015 would have an 0.1% effect on the sewer user rates.

**SUMMARY/CONCLUSION:**

For the 2015 to 2019 Financial Plan, it is suggested that council consider increasing funding for the following:

- Increase Storm Drainage Infrastructure replacement by $20,000 (0.2% tax increase)
- Increase Public Works Vehicle & Equipment funding by $20,000 (0.2% tax increase)
- Increase Fire Vehicle funding by $20,000 (0.2% tax increase)
- Increase Computer funding by $10,000 annually (0.1% tax increase)
- Increase Parks funding by $20,000 in 2015 and $20,000 in 2016 (0.2% each year)
- Increase Fire Equipment funding by $10,000 (0.1% tax increase)
- Add 0.1% rate increase for Sewer Infrastructure

By limiting the increases for funding to 1% for infrastructure replacement, it allows for more choices when reviewing operating service needs but works towards reducing the infrastructure gap.

For any new assets, it is recommended that the amortization should be funded.

**RECOMMENDATIONS:**

That Council receive this information for 2015 budget deliberations.

Respectfully submitted,

Theresa Flynn
Director of Financial Services

Concurrence,

Mark Brodrick
Director of Planning & Community Services

Concurrence,

Ron Maylen
Works Superintendent

Concurrence,

Gary Wilton
Director of Protective Services