



AGENDA - SPECIAL COUNCIL MEETING

June 29, 2020, 1:00 p.m.

Council Chambers

8645 Stave Lake Street, Mission, BC

Pages

1. CALL TO ORDER

2. ADOPTION OF AGENDA

3. NEW BUSINESS

a. Silverdale Comprehensive Planning Area (SCPA) Financial Model

2

No staff recommendation accompanies this report and Council action is not required at this time. The cover report and attached financial analysis is provided for Council to make an informed decision regarding initiating neighbourhood planning for the Silverdale Comprehensive Planning Area as per LAN.64.

4. ADJOURNMENT



Corporate Administration Staff Report

DATE: June 29, 2020
TO: Chief Administrative Officer
FROM: Barclay Pitkethly, Deputy Chief Administration Officer
SUBJECT: **Silverdale Comprehensive Planning Area (SCPA) Financial Model**
ATTACHMENT: A – Community Amenity Contribution and Taxation Analysis for Silverdale Development – Rollo and Associates

No staff recommendation accompanies this report and Council action is not required at this time. The cover report and attached financial analysis is provided for Council to make an informed decision regarding initiating neighbourhood planning for the Silverdale Comprehensive Planning Area as per LAN.64.

PURPOSE:

The purpose of the report is to present the financial analysis commissioned by the District of Mission to assess three main areas to developing Silverdale:

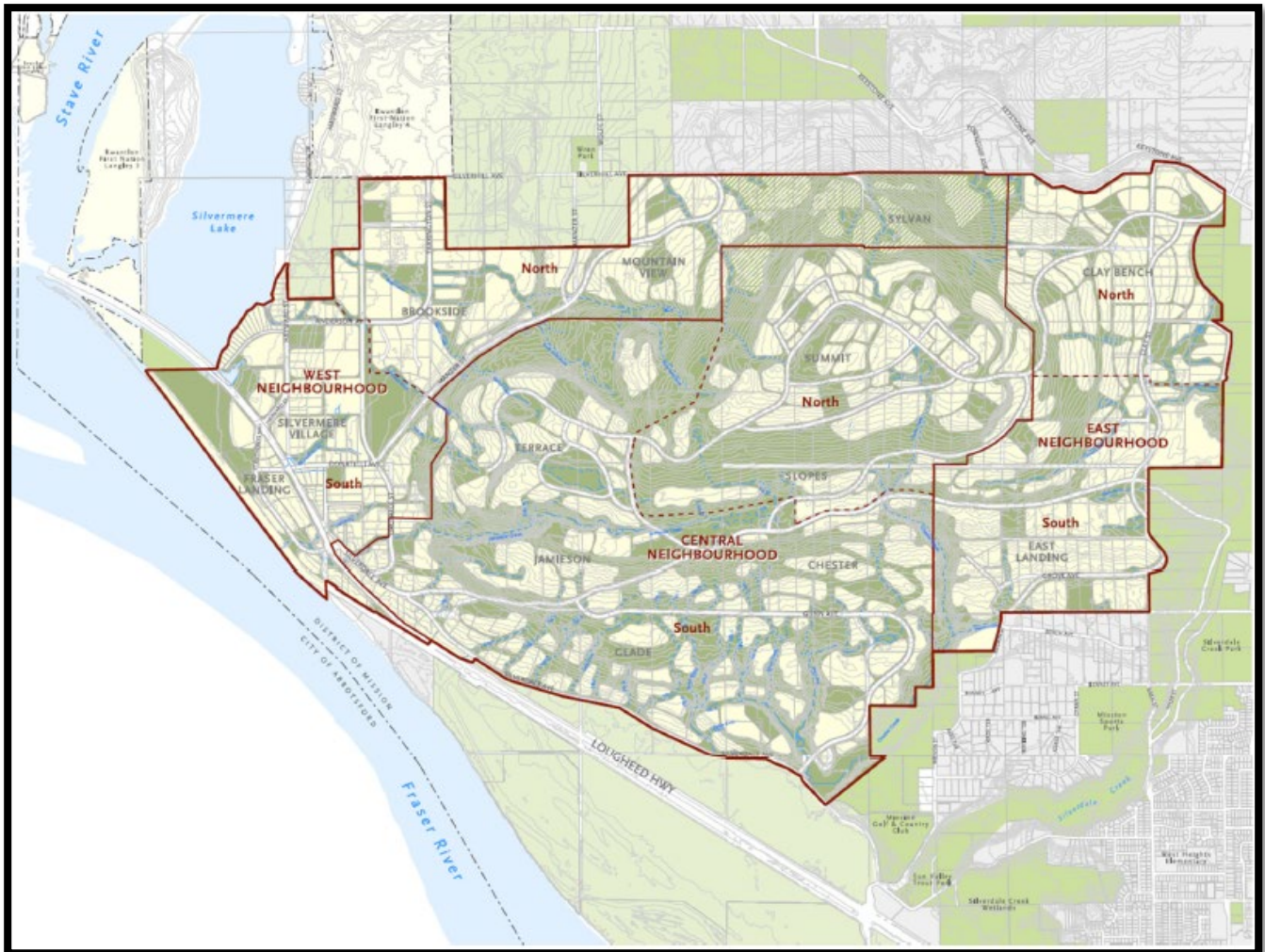
1. To provide the District a cost analysis of development, specifically, those development costs attributed through a Development Cost Charge bylaw;
2. To provide the District a cost analysis of amenities needed to develop a complete community; and
3. To provide the District an analysis of the taxation needed to operate and maintain new development in Silverdale, specifically to see if development in Silverdale would be a taxation burden, a taxation benefit, or is tax neutral, on the existing tax payers in Mission

BACKGROUND:

Master Infrastructure Study (MIS)

The District conducted a master infrastructure study to show how Silverdale could develop from an engineering perspective. This study also did an analysis of the costs to develop the area from an infrastructure perspective and only did a cursory look at a cost recovery analysis from an amenity perspective based on the District's current Community Amenity Contribution policy.

The MIS identified the three separate neighbourhoods (East, Central, and North) that could be divided further (East North, East South, Central South, Central North, and West North, and West South) into six distinct neighbourhood planning areas. The report also identified a preferred development order starting in the Central South neighbourhood.



As a result of the initial financial analysis, there were certain gaps identified. The identification of these gaps, namely additional DCC's, community amenity cost shortfalls and a taxation analysis that prompted further study.

To ensure Council may make as informed a decision as possible to move forward with neighbourhood planning, the District commissioned Rollo and Associates to conduct this analysis on its behalf.

DISCUSSION AND ANALYSIS:

Development Cost Charges

The Master Infrastructure Study for the Silverdale Comprehensive Planning Area scope of work captured much of the infrastructure costs attributable to development, however, some costs that can be directly attributable to development of Silverdale were not captured. Costs such as community detention facilities, stormwater erosion protection, Silverdale Creek Bridge, and other rural road improvements were not included and have been added.

The following table provides a breakdown of the updated costs by project:

Project Category:	Cost:
Roads	\$289.0 m
Water	\$32.9 m
Sanitary	\$13.5 m
Drainage	\$95.7 m
Water & Sanitary Extensions	\$10.4 m

The DCC rate for Silverdale specific projects indexed to 2019 cost estimates equals **\$49,511** per unit.

The approach to the DCC portion of the report is to provide a Silverdale specific DCC 'order of magnitude' rate to assist in making development decisions and to assist in developing a District DCC Bylaw. Through the neighbourhood planning process, and the master planning studies (Transportation and Utilities) currently underway, the DCC rates will be refined with updated costs.

It should also be noted the District of Mission has district wide DCC's not included within this analysis. The district wide DCC's include projects such as Stave Lake Street, Cedar and 7th Avenue Intersection, the Silvercreek Parkway project and regional sanitary and water projects including the Fraser River sanitary crossing. The current district wide DCC program is grossly underfunded and will be updated during the master planning studies when there is a better understanding of those overall costs.

Currently, district wide DCC's are currently as follows:

Housing Type:	DCC Rate:
Single Family	\$14,732.97/lot
Single Family Compact/Row Home	\$13,090.00/lot
Duplex	\$26,180.93/lot
Townhouse	\$84.18/sq. m.
Apartment	\$86.35/ sq. m.
Commercial	\$87.91/sq. m.
Industrial	\$34.55/sq. m.
Institutional	\$103.00/sq. m.

Community Amenity Contributions

Based on the target densities and population included in for the Master Infrastructure Study, Mission's Facilities Master Plan, and an analysis of existing amenities within the district, the financial analysis aims to recreate amenities Mission currently has per population within the SCPA. This approach is strategic in that it doesn't create two Missions – one with greater amenities than the other, or placing more of a burden on one area of Mission versus the other knowing amenities will be shared throughout the district as a whole.

The list of amenities included within the Community Amenity Cost analysis includes:

Amenity:	Cost:
Land for Amenities incl. Parks over 5%	\$1.0m/acre
Development in Natural Open Spaces - trails, trail heads, signage, etc.	\$83,750
Development in Community Parks - small neighbourhood level parks	\$1,675,000
Development in District Parks - larger parks with playgrounds, sports facilities, etc.	\$2,040,000
Development of Sports Parks - similar to the existing Mission Sports Park	\$4,750,000
Development of Other Parks	\$500,000
City-Wide Facilities - includes new recreation centre	\$77,288,402
Community Facilities	\$2,923,430
Fire Station	\$4,850,000
West Coast Express Station	\$3,000,000
Transit Exchange (on-street)	\$500,000

Excluding land, the cost to build amenities in Silverdale is expected to be approximately \$97.6 million.

The analysis looks at three scenarios for funding amenities in Silverdale: 1) having each phase pay for their own amenities; 2) having each dwelling unit contribute the same amount with escalation built in for inflation; and 3) a blended approach.

Scenario 1 is the simplest approach, where each phase pays for their own amenities and does not require a CAC policy.

Scenario 2 is the way most CAC policies are constructed where each unit of development pay equally over time. In order to construct needed amenities however, this approach would require the District to take on debt. The CAC per unit is **\$11,318** per dwelling unit in this scenario.

Scenario 3 is a blended approach where each phase contributes a different amount based on when amenities may be needed by the District; thus, no debt is required. This is not a traditional approach utilized by local government, but can be worked into a new policy.

Taxation Analysis

The task for the consultant is to ask whether developing Silverdale would be a taxation burden to the rest of Mission, or in other words, can Mission afford to develop Silverdale. It is often stated that residential development does not pay for itself, and certainly in Mission, where the tax burden is significantly swayed to the residential sector, the question must be asked.

In this regard, Rollo and Associates looked at the impact development in Silverdale would have on the taxation in Mission and whether or not the District could afford to develop the area.

Over time, the analysis shows taxation will pay for operations and maintenance costs as a result of developing Silverdale. There will be some years where costs will exceed the ability to pay based on today's taxation rates. These years typically follow major infrastructure investment where operating (staffing, maintenance, etc.) have the greatest impact on costs. An example would be the construction of a new recreation centre where operations and maintenance costs are significant, but the benefit would be felt district wide.

COUNCIL GOALS/OBJECTIVES:

The attached report meets Council's 2018 – 2022 Strategic Plan and addresses Strategic Focus Area 4 and Priority Action item 4.7:

4. Livable Complete Community

Council supports the evolution of Mission as a livable, attractive, and complete community that meets the everyday needs of its residents.

Goals:

To develop distinct neighbourhoods and a livable community

To be an attractive community for living, working, and playing

To the greatest extent possible, meet the social, cultural, and physical needs of the community

Priority Action 4.7 Undertake neighbourhood planning

Short Term:

- *Southwest Mission*

Additionally, this report supports Strategic Focus Area 2:

2. Secure Finances, Assets, and Infrastructure

Central to Council's vision and mission is the responsible planning and management of public resources and infrastructure. Council is committed to working with the community to ensure resources are available to fund services and to plan, manage and maintain public infrastructure assets.

Goals:

To ensure sound financial management of the District

To ensure resources are available when needed

To ensure well planned, maintained and financed public infrastructure

FINANCIAL IMPLICATIONS:

There are no immediate financial implications associated with this report. This report is intended to inform Council on the decision to initiate neighbourhood planning for the Silverdale Comprehensive Planning Area.

SIGN-OFFS:

Barclay Pitkethly, Deputy CAO



Reviewed by:

Mike Younie, Chief Administrative Officer

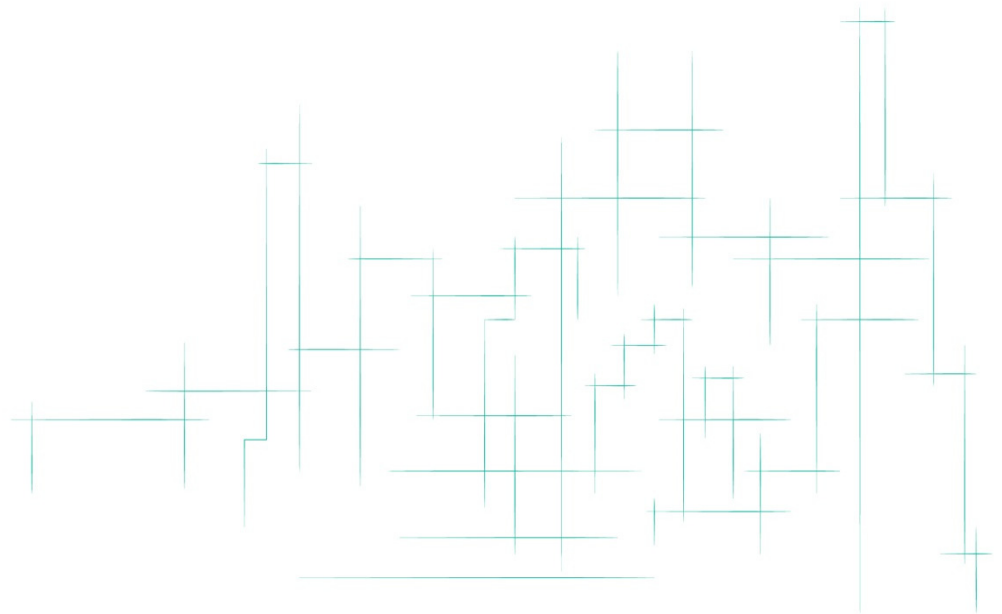
Comment from Chief Administrative Officer:
Reviewed.



Community Amenity Contribution and Taxation Analysis for Silverdale Development

For: District of Mission

February 2020



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Executive Summary

G. P. Rollo & Associates (GPRA) has been retained by the District of Mission (the District) to update the estimated development cost charges (DCCs) for the Silverdale Comprehensive Development Area and to perform a community amenity contribution (CAC) and taxation analysis. GPRA understands that although the work recently completed by GPRA as part of the Consultant Team led by EKISTICS addresses the question of infrastructure capital cost financing in Silverdale, other important questions remain unaddressed, including:

- What is the capital cost of the amenities currently proposed for Silverdale?
- What would be the minimum level of CAC required from development in the area to pay for its amenities?
- What would be the minimum level of CAC at which all project phases contributed the same CAC per dwelling unit and still pay for the amenities needed in all phases?
- What would be the financial consequences (i.e. capital expenses and revenues) for the District of each of the CAC scenarios described above?
- Will property taxes and fees (for example, community centre admission fees) in Silverdale be sufficient to cover the cost of municipal operations, maintenance, and replacement costs in the area?
- More broadly, what will be the financial consequences for the District of property tax revenue from development in Silverdale?

This report addresses these and related questions within three overall sections:

- Section 2: Silverdale financial model (pg. 2 – 10): this section summarizes the Silverdale financial model used throughout this report and updates the model with additional costs identified since the last analysis
- Section 3: CAC analysis (pg. 11 – 20): this section deals with the capital costs of Silverdale's community amenities and identifies the financial outcomes both for the District and for Silverdale's development of different approaches to community amenity funding
- Section 4: Taxation analysis (pg. 21 – 23): this section presents the taxation implications of the proposed development in Silverdale.

There is also an Appendix of more detailed tax forecasting information.

The key findings of these three sections are as follows:

DEVELOPMENT COST CHARGES

The appropriate DCC rates for Silverdale indexed to 2019 cost estimates are as follows:

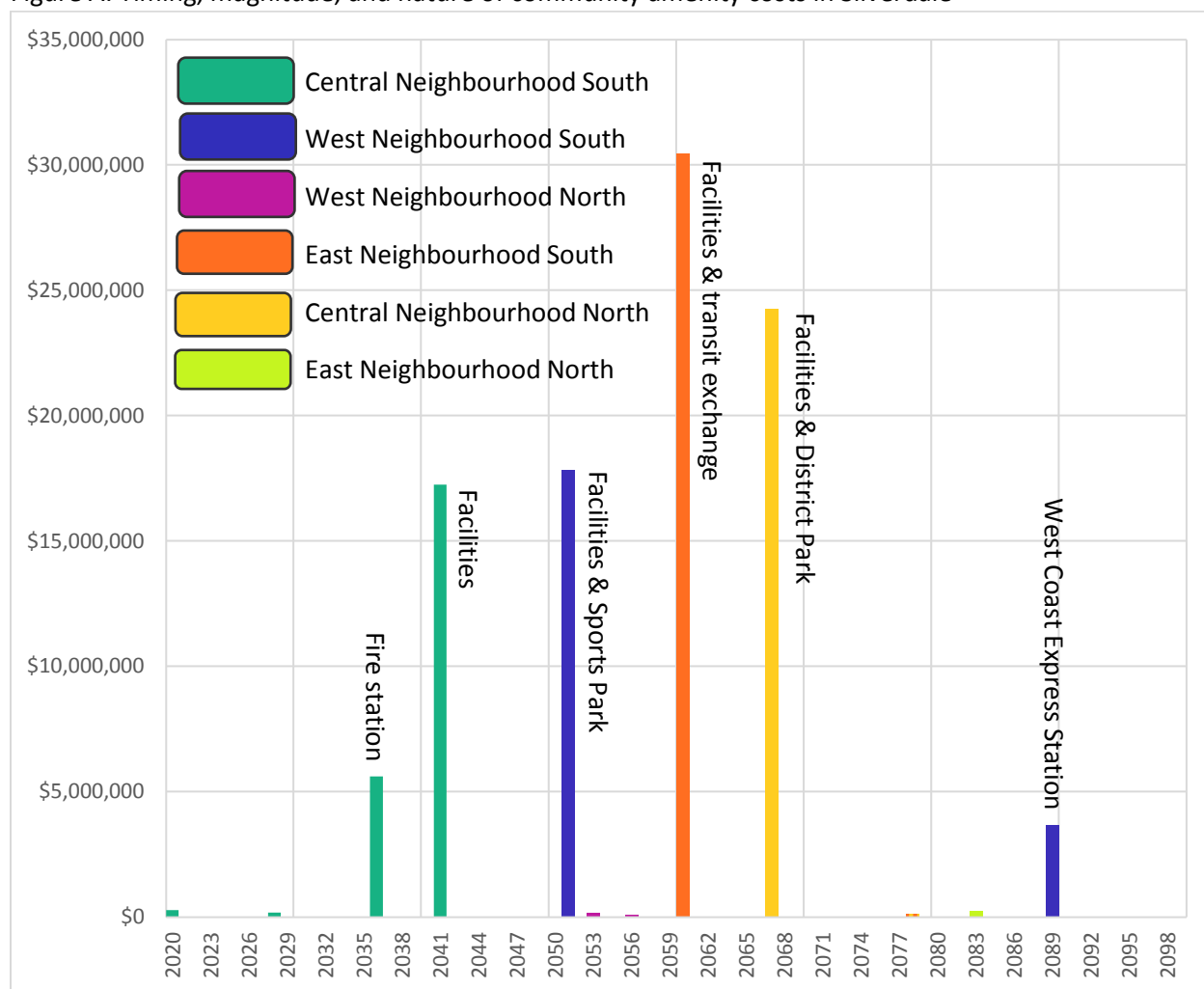
- Roads: \$32,409 per unit
- Water: \$3,686 per unit
- Sanitary: \$1,514 per unit
- Drainage: \$10,732 per unit
- Extensions: \$1,171 per unit
- **TOTAL: \$49,511 per unit**

Which can also be broken up as follows:

- Major infrastructure: \$26,744 per unit
- Contingency: \$13,372 per unit
- Soft costs: \$2,097 per unit
- Escalation and interest: \$7,298 per unit
- **TOTAL: \$49,511 per unit**

COMMUNITY AMENITY COSTS

Excluding the value of land, the cost of amenities in Silverdale is expected to total \$100 million. Including land (beyond the required contribution of 5% of gross land area, which does not count as a CAC), this cost rises to \$165 million. The timing and magnitude of community amenity costs is indicated below.

Figure A: Timing, magnitude, and nature of community amenity costs in Silverdale¹

GPRA has investigated the impact on Silverdale's development economics of different approaches that the District might apply to community amenity financing:

- Scenario 1: Phases pay for their own community amenities
- Scenario 2: In this scenario, the District establishes a Silverdale Amenity Fund. Phases make the minimum CAC contributions such that all amenities are funded, and all project phases contribute the same CAC per dwelling unit plus reasonable escalation over time. When required, amenity spending comes out of the fund. When amenity cost requirements exceed the fund, the District must make up the difference by other means such as borrowing
- Scenario 3: The most equitable approach (most equal CAC contributions per unit) not requiring external funding sources such as District debt.

¹ Figure A does not include the monetary value of park and community lands above 5% of gross land area; it is limited to true costs. All costs are shown at present values with no escalation over time and no contingency factors.

Scenario 1 has the advantage of being very simple and would not even require a CAC policy per se: each phase of development would simply provide its own amenities. The disadvantage of Scenario 1 is that it is inequitable, placing a larger burden on some phases than others.

Scenario 2 is more equitable (in that it distributes community amenity costs evenly) but would require the District to expand its policy and create a Silverdale Community Amenity Fund. During periods when total amenity costs exceeded total amenity charges collected, the District would be required to make up the difference by other means such as borrowing. Unlike DCC-eligible costs, front-end agreements could not be used to transfer CAC funds from one developer to another.

Scenario 3 is a compromise between Scenarios 1 & 2: CAC contributions are variable but less variable and therefore more equitable than Scenario 1, while still being high enough in all cases to make outside funding unnecessary.

Table: Non-land CAC contributions by phase and CAC scenario²

Phase	Total non-land CACs			Non-land CACs per unit		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2 ³	Scenario 3
Central Neighbourhood, South	\$23,313,996	\$38,921,420	\$23,313,996	\$4,710	\$7,863	\$4,710
Central Neighbourhood, North	\$24,322,355	\$29,202,130	\$27,998,407	\$5,730	\$6,879	\$6,596
West Neighbourhood, South	\$21,512,052	\$7,789,315	\$14,854,893	\$6,886	\$2,493	\$4,755
West Neighbourhood, North	\$277,763	\$13,129,250	\$16,067,252	\$214	\$10,134	\$12,401
East Neighbourhood, South	\$30,492,180	\$18,827,416	\$19,684,948	\$20,733	\$12,802	\$13,385
East Neighbourhood, North	\$245,753	\$14,160,488	\$1,059,438	\$173	\$9,946	\$777
TOTAL	\$100,164,099	\$122,030,019	\$102,978,934	\$6,067	\$7,392	\$6,238

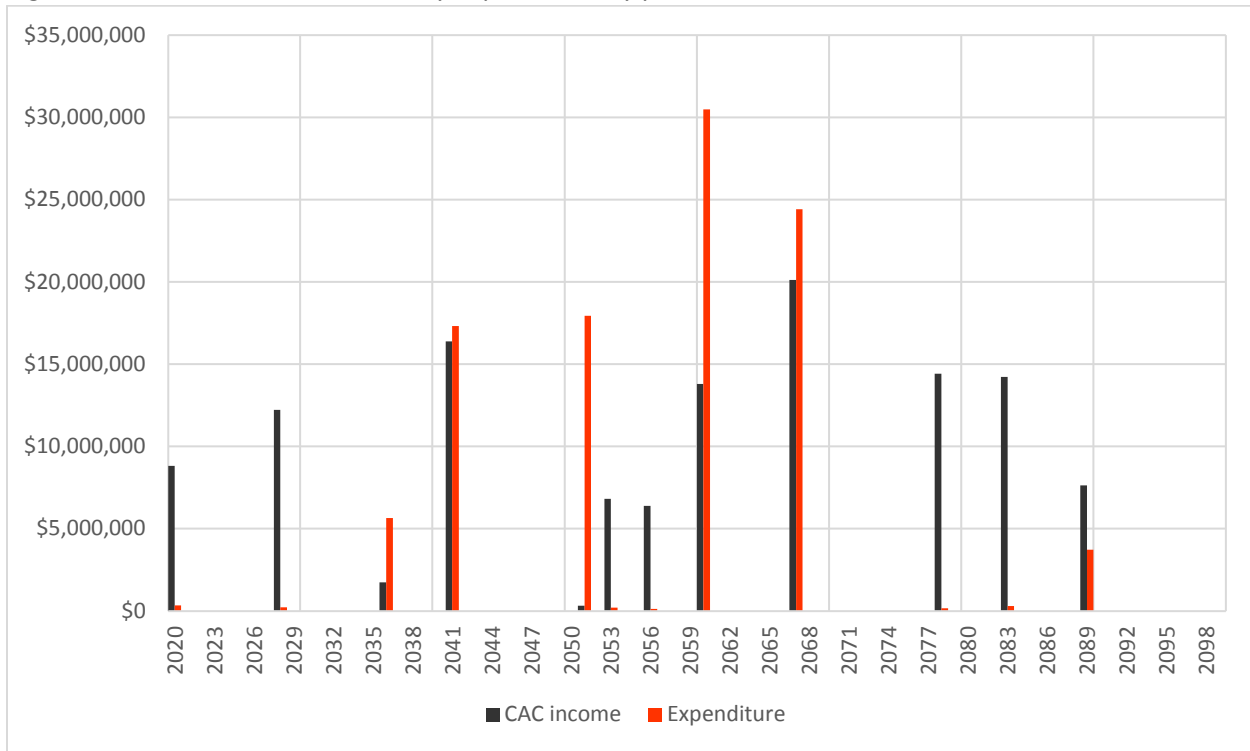
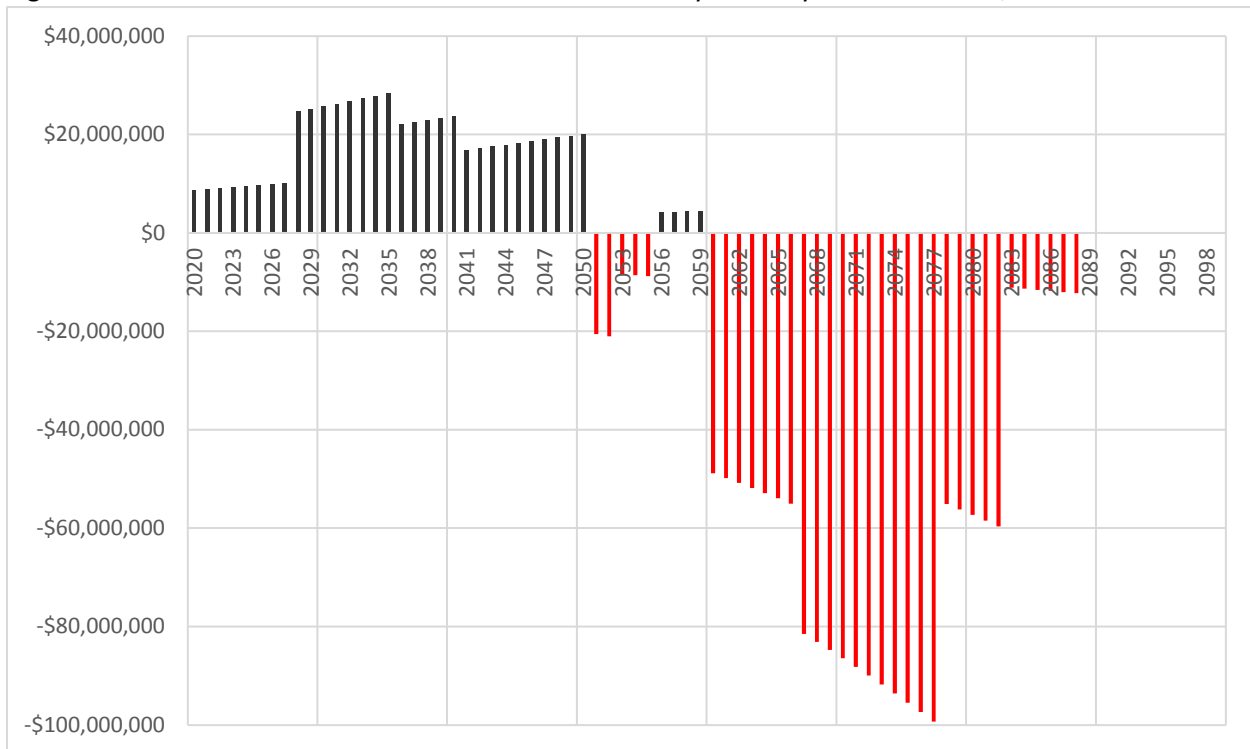
Developer obligations in Scenario 1 would vary by phase but would average \$6,067 per dwelling plus parkland contributions, with some phases paying less than \$300 per dwelling (West Neighbourhood North and East Neighbourhood North) and other phases paying more. The East Neighbourhood South phase would pay by far the most per dwelling (\$20,733).

In Scenario 2, each phase contributes the same CAC per dwelling of \$11,318 which includes parkland contributions above 5% of gross land area. GPRA assumes that this rate would increase by 2% annually. This is the lowest amount that would cover all of Silverdale's amenity costs as well as the interest on any required District debt (also assumed to be 2% annually). Park contributions above 5% of gross land area would not involve cash transfer but would count towards each phase's \$11,318 per unit total. The cash amounts representing the non-land portion of each phase's contribution would average \$7,392 per dwelling and range from \$2,493 per dwelling for West Neighbourhood South to \$12,802 per dwelling for East Neighbourhood South. The CAC rate identified in Scenario 2 is greater than the average rate identified in Scenario 1 because it covers cost escalation and interest.

The balance of CAC income versus amenity expenditure by phase in Scenario 2 is compared in Figure B below, and the resulting balance of funds or debt in the Silverdale Community Amenity Fund is indicated in Figure C below.

² In practice these amounts are increased to reflect contingencies and cost escalation over time, but these adjustments are excluded here for ease of comparison.

³ The CAC rates per dwelling for Scenario 2 differ because each phase contributes different amounts of parkland; after the value of parkland in excess of 5% is added to this amount, each phase contributes the same \$11,318 per dwelling.

Figure B: CAC income versus amenity expenditure by precinct in CAC Scenario 2⁴Figure C: Balance of funds or debt in Silverdale Community Amenity Fund over time, CAC Scenario 2⁵⁴ Does not include escalation over time.⁵ This figure *does* include escalation over time as well as interest.

As Figure B above indicates, in CAC Scenario 2, some phases of development in Silverdale will generate more CAC funds than their amenities consume, increasing the Community Amenity Fund or decreasing District debt. Other phases will consume more CAC funds than they generate which will have the opposite effect. Figure C adds escalation over time as well as interest to produce a forecast of the balance of funds (positive or negative) in the Silverdale Community Fund over time in CAC Scenario 2.

Scenario 3 is the most equitable approach to community amenity financing that would not require external funds would be for the Silvermere Village precinct of West Neighbourhood South to pay for the remaining areas to form two CAC “pools” to equalize cost burdens, which would be divided based on timing:

- The first pool would develop from the 2020s to 2060s. These areas would make total amenity contributions (including land) of \$13,586 per unit and would consist of:
 - Central Neighbourhood South
 - West Neighbourhood North
 - The Silvermere Village precinct of West Neighbourhood South
 - The East Landing precinct of East Neighbourhood South
- The second pool would develop during the 2070s – 2090s. These areas would make total amenity contributions (including land) of \$2,116 per unit and would consist of:
 - The Slopes precinct (split between East Neighbourhood South and Central Neighbourhood North)
 - East Neighbourhood North
 - The Fraser Landing precinct of West Neighbourhood South.

In summary, the District may require all phases of development in Silverdale to pay for their own community amenities (Scenario 1), or the District may require each phase to contribute \$11,318 per dwelling, which includes park and community lands in excess of 5% of gross land area (Scenario 2). The first option would not require the District to find outside funding but would burden some phases more than others. The second option would be more equitable but would require the District to find outside funding in the mid-to-late twenty-first century. GPRA designed a third approach to combine the best elements of Scenarios 1 & 2. Scenario 3 is strictly better than Scenario 1 except for administrative obligations, but the choice between Scenario 2 and Scenario 3 requires the District to choose between maximum equality between phases (Scenario 2) and District debt avoidance (Scenario 3).

All phases of development are economically viable under either approach.

TAXATION ANALYSIS

GPRA has developed a model of evolving property values and municipal expenses in Silverdale and in the rest of Mission from now until the end of the twenty-first century (described in detail in the Appendix). In 2100 if developed as proposed, Silverdale is projected to make up 34% of Mission's property value, to provide 32% of Mission's property tax revenue, and to generate about 30% of the District's municipal expenses. Figure D below shows Silverdale's share of the District's property value and municipal expenses over time.

Figure D: Silverdale share of total district property taxes and expenses over time

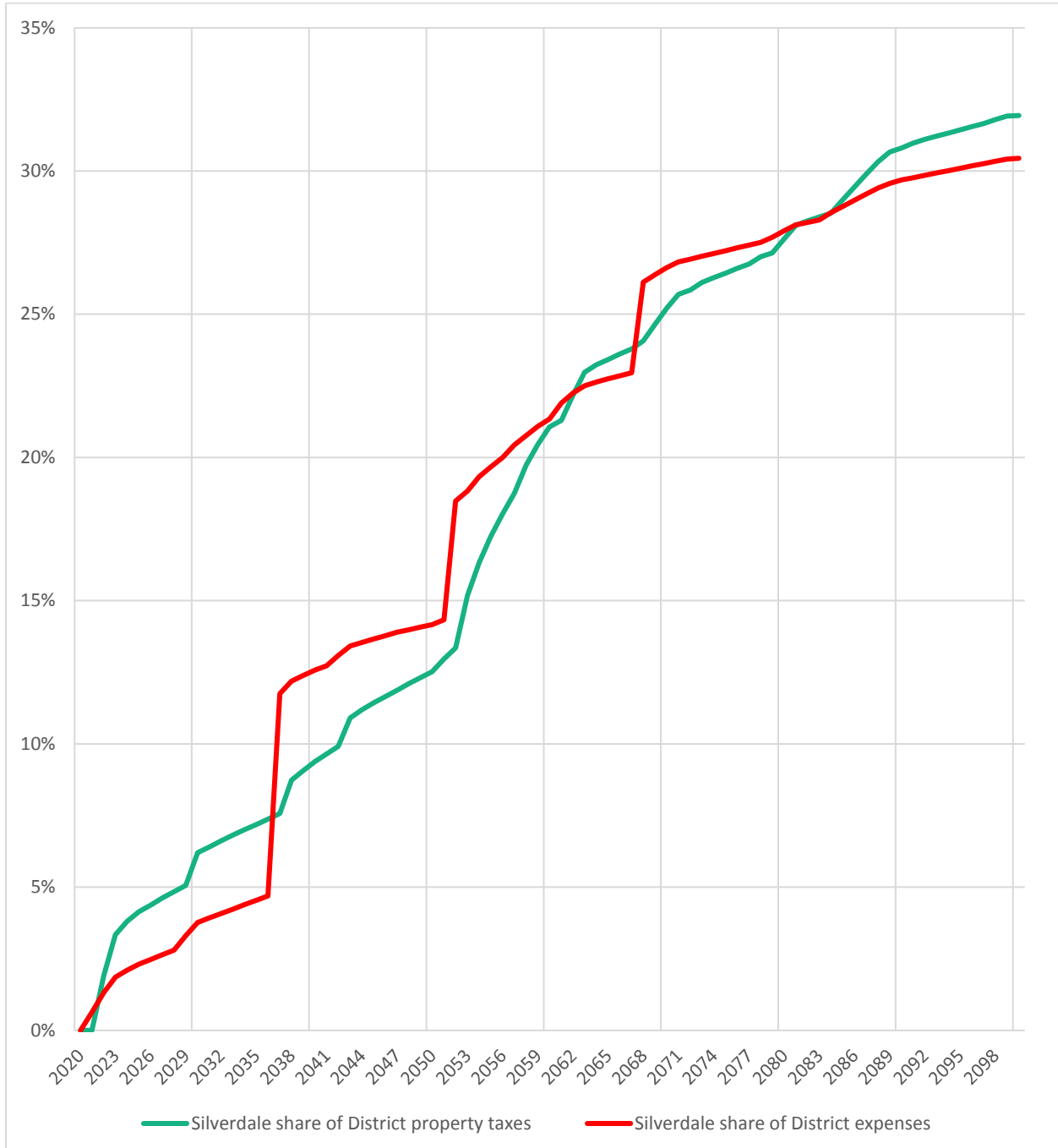
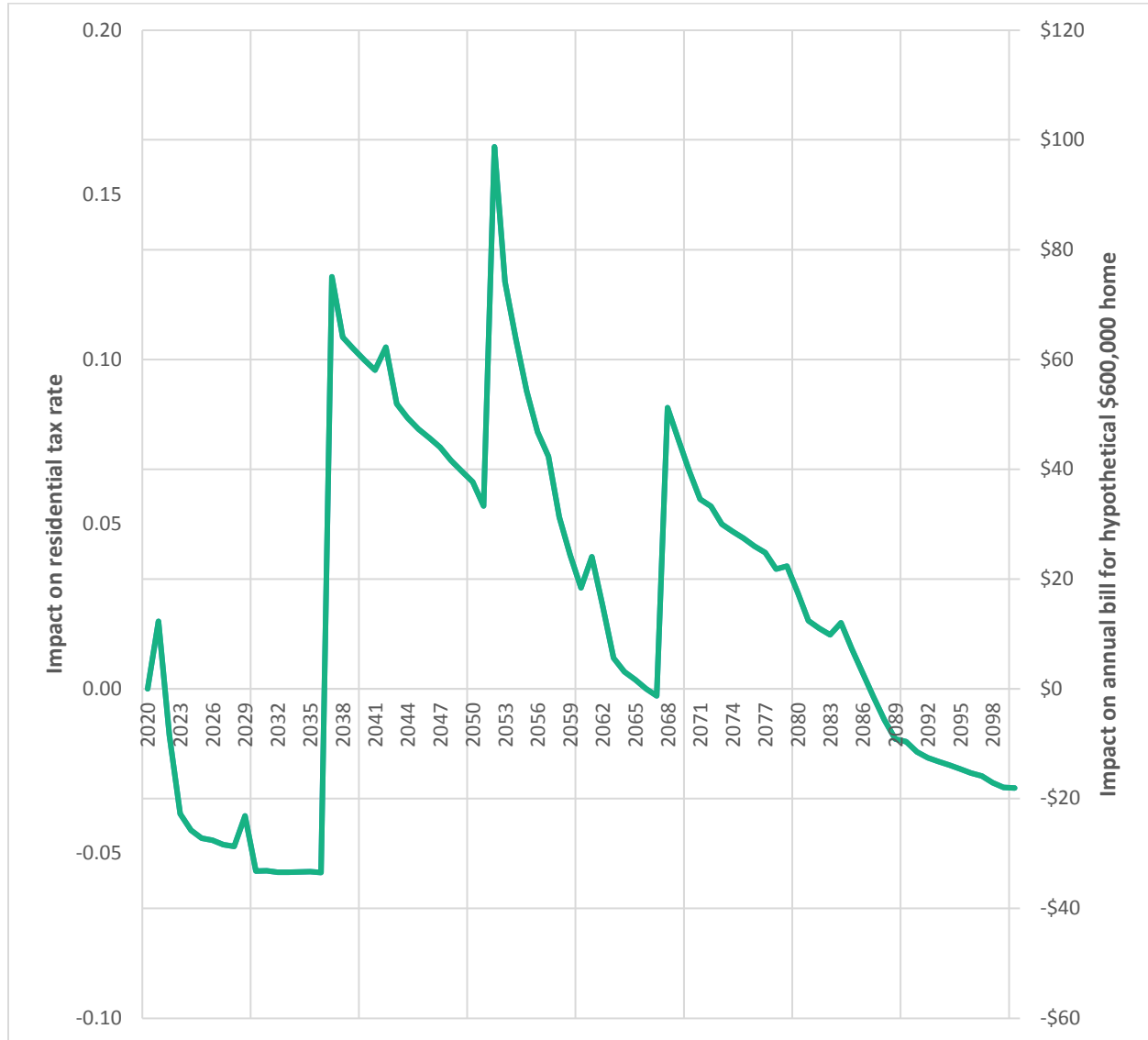


Figure D shows that the development of Silverdale is expected to have a negative impact in 2021, from 2037 – 2062, and from 2068 – 2080. And it is expected to have a positive impact from 2022 – 2036, 2063 – 2067, and from 2081 onward.

The property tax rate must be adjusted to ensure that tax revenue covers expenses. The development of Silverdale will therefore lead to an increased tax rate in years when its share of expenses exceeds its share of tax revenue; and to a decreased tax rate in years when the reverse is true. The impact of Silverdale on Mission’s property tax rate over time is indicated below.

Figure E: Impact of Silverdale on Mission’s residential property tax rate over time (‰)⁶



⁶ This symbol (‰) is a “per mill” symbol meaning “parts per thousand”. It contains three zeroes and is analogous to the standard “percent” symbol which contains two zeroes and means “parts per hundred”.

Includes taxes in the general, police, drainage, and library categories. Excludes waste management because this is charged as a flat rate rather than a mill rate.

From 2023 – 2036, the development of Silverdale has a generally positive impact and is expected to decrease Mission’s residential property tax rate by about 0.05‰, or about \$28 for a \$600,000 home. Then from 2037 – 2086 Silverdale has a generally negative impact, causing an increase in Mission’s property tax rate by an average of 0.06‰, or about \$35 for a \$600,000 home. Finally, from 2087 – 2100, Silverdale will have a positive impact and is expected to decrease Mission’s property tax rate by an average of 0.02‰, or about \$13 on a \$600,000 home. Within these overall trends there are short-term spikes and fluctuations, mostly due to the introduction of new municipal facilities.

The fluctuations in Figure E above indicate years when Silverdale’s impact on the property tax rate are more positive or more negative. It is possible to smooth these fluctuations by imagining that the District will set aside funds in years when Silverdale would otherwise decrease the tax rate and then use these funds in years when Silverdale would increase the tax rate (paying or receiving 2% interest on the balance in a given year). Doing this still produces a shortfall over the 80-year period analyzed. However, by the same token it is also possible to measure how much higher the property tax rate would have to be to eliminate this shortfall, thereby reducing the difference between the two scenarios to a single figure: the average difference in tax rates such that the two scenarios “break even” by year 2100.⁷

This amount is a tax rate increase of about 0.02‰ for residential properties and proportional increases for other property types, which amounts to about \$12.28 per year for a hypothetical \$600,000 home. This is the amount that Mission’s property taxes would need to be increased so that increased revenues from Silverdale offset increased expenses from Silverdale between now and 2100 and may be viewed as the “average annual tax increase from Silverdale”.

Note as indicated in Figure 29, pg. 49 (in the Appendix) that property values in Silverdale generally keep pace with municipal expenses in Silverdale. The reason Silverdale’s development will tend to cause an increase in tax rates in Mission is that compared to the rest of Mission, it contains a larger share of residential property which pays a lower tax rate.

At build-out, based on the draft land use densities, it is expected that taxation will cover operational and maintenance costs.

⁷ For Mission to literally take this approach would require outside funding such as District debt during the second half of the twenty-first century. GPRA knows this is not Mission’s preferred approach, so a variable tax rate over time as shown in Figure E is more realistic. However, District staff requested the calculation of a single number that reflects that average increase in property tax from Silverdale, and this approach is the clearest and simplest approach to estimating that number.

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1 Introduction

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There is also an Appendix of more detailed tax forecasting information.

2 Silverdale Financial Model

During the first half of 2019 as part of a Project Team led by EKISTICS working on the Silverdale Master Infrastructure Strategy (MIS), GPRA developed on behalf of the District a financial model of the proposed development in Mission's Silverdale Area. The model incorporated then-current data on revenue, construction costs, infrastructure costs, and project phasing to verify the Silverdale development's viability and identify the impact to Silverdale and to the District of different approaches to infrastructure financing.

This financial model provides a robust and detailed basis for further analysis of Silverdale's development economics and is used through this CAC and taxation analysis. Although the research that informs the financial model is about one year old, the model's assumptions have been minimally altered to allow maximum comparability with GPRA's previous work. Despite its age, GPRA believes the financial model is still accurate enough for the purposes of this present analysis.

The model has also been restructured to reflect six neighbourhoods rather than the thirteen precincts that were previously used to organize Silverdale. Precisely the same pattern of development, land use mix, development costs, and revenues are envisioned as in the previous phase of analysis (with the exception of additional infrastructure costs detailed below), but project viability is now measured and details summarized at the level of the neighbourhood rather than the precinct.

2.1 Land Use, Infrastructure Cost, and Phasing

In this report "Silverdale" refers to the Silverdale Comprehensive Development Area which consists of the 3,340 ac (1,392 ha) outlined in yellow in Figure 1 below. At buildout, Silverdale is expected to contain approximately 17,000 homes and 40,000 residents. The phasing, land use distribution, and infrastructure costs assumed within the financial model is depicted in Figures 1 & 2 and Tables 1 – 4 below. The following land use plan is the basis of all analyses in this report.

Figure 1: Silverdale Area (courtesy of EKISTICS)

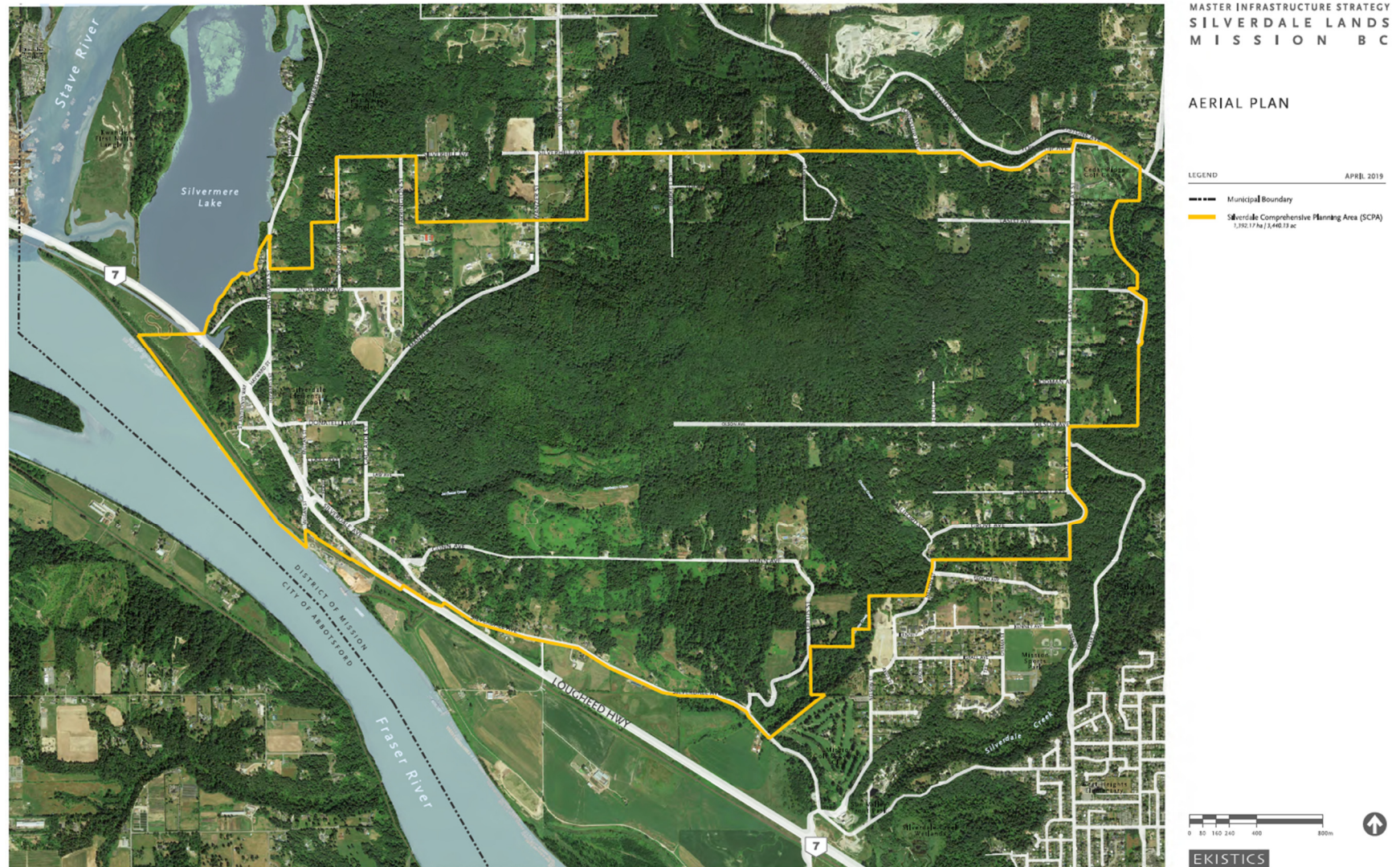
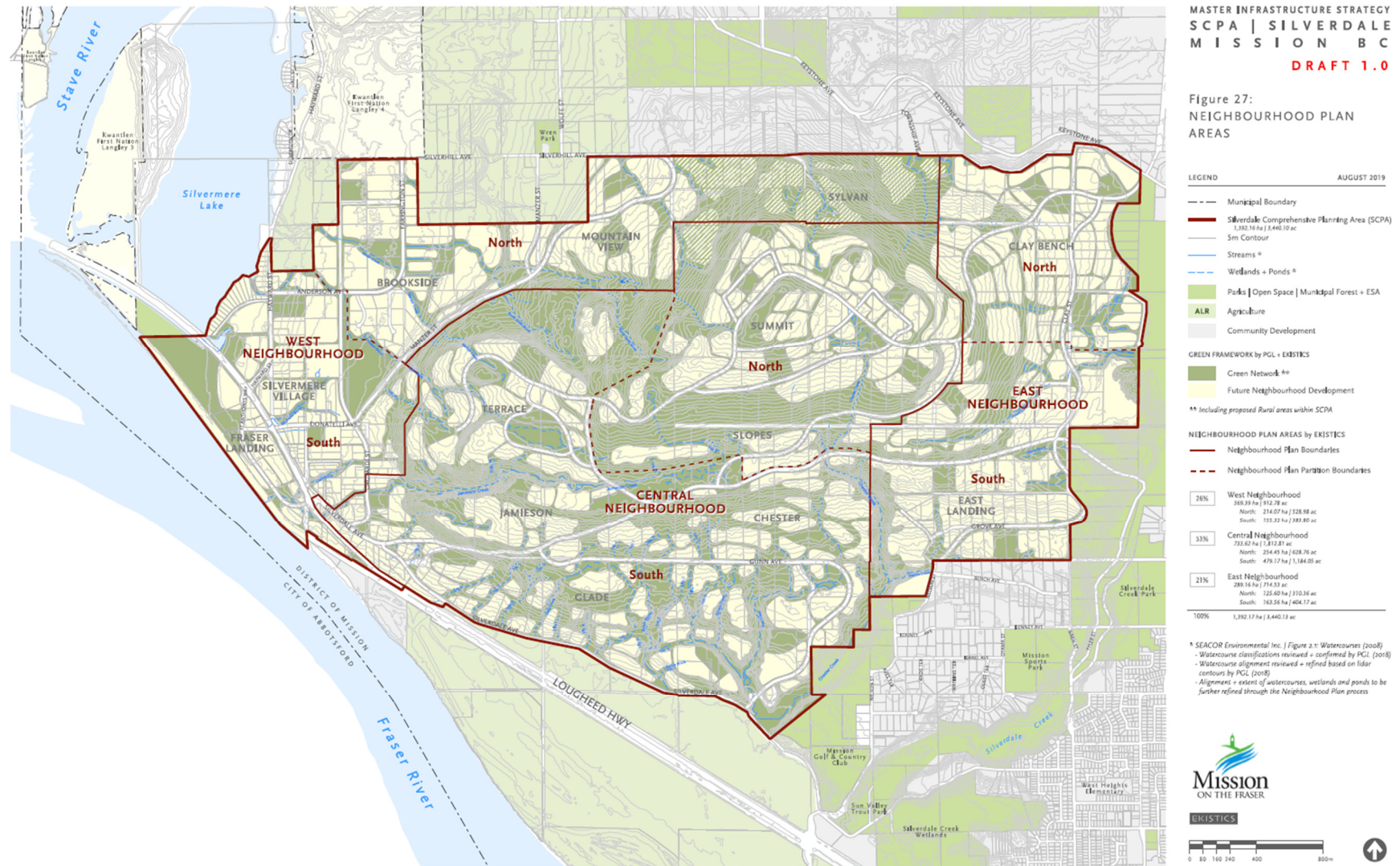


Figure 2: Silverdale neighbourhoods



The MIS Project Team analyzed the Silverdale area and identified developable land portions. For the purposes of feasibility analysis only, EKISTICS divided these developable portions into 353 development blocks and assigned to each block one of sixteen proposed land uses including residential, commercial, mixed use, park, school, and community facility options. EKISTICS also proposed a network of major roads. The 353 development blocks have been grouped into six development phases corresponding to the neighbourhoods indicated in Figure 2 above. The six phases are summarized below.

Table 1: Silverdale land area by phase and proposed land use (ac)⁸

Phase	Central Neighbourhood		West Neighbourhood		East Neighbourhood		TOTAL
	South	North	South	North	South	North	
Single family – rural	45.86	7.09	-	118.60	5.59	25.26	202.40
Single family – estate	64.45	-	15.78	9.37	45.35	-	134.95
Single family – urban	125.82	113.20	58.24	147.63	70.22	122.68	637.79
Townhome	158.98	87.02	58.06	27.40	36.48	40.51	408.45
Apartment	13.67	26.70	14.98	-	5.41	-	60.76
Mixed-use	1.88	2.03	6.96	-	-	-	10.87
Commercial	3.75	-	15.34	-	2.61	0.89	22.59
Elementary school	22.09	9.72	10.31	7.16	-	10.01	59.28
Middle school	-	-	-	-	15.06	-	15.06
High school	-	-	-	-	27.31	-	27.31
Community / arts centre	3.25	4.49	2.58	-	5.97	-	16.30
Emergency - firehall	1.69	-	-	-	-	-	1.69
Neighbourhood park	57.30	27.68	15.23	20.58	13.83	18.22	152.84
Community park	14.66	12.84	28.68	-	-	-	56.18
Natural open space & roads	682.66	275.14	152.47	246.25	169.43	107.69	1,634
TOTAL	1,196	566	379	577	397	325	3,440

Table 2: Silverdale proposed residential units – total⁸

Phase	Central Neighbourhood		West Neighbourhood		East Neighbourhood		TOTAL
	South	North	South	North	South	North	
Single family – rural	11	2	-	30	1	6	51
Single family – estate	64	-	16	9	45	-	135
Single family – urban	629	566	291	738	351	613	3,189
Townhome	3,180	1,740	1,161	548	730	810	8,169
Apartment	889	1,735	974	-	351	-	3,949
Mixed-use ⁹	188	203	696	-	-	-	1,087
TOTAL	4,961	4,247	3,138	1,325	1,479	1,430	16,580

⁸ Approximated by GPRA based on information received at the precinct level from EKISTICS

⁹ Dwellings in mixed-use areas are apartments.

Table 3: Silverdale proposed residential units – new¹⁰

Phase	Central Neighbourhood		West Neighbourhood		East Neighbourhood		TOTAL
	South	North	South	North	South	North	
Single family – rural	-	-	-	-	-	-	-
Single family – estate	64	-	2	9	38	-	114
Single family – urban	629	566	291	738	351	613	3,189
Townhome	3,180	1,740	1,161	548	730	810	8,169
Apartment	889	1,735	974	-	351	-	3,949
Mixed-use ¹¹	188	203	696	-	-	-	1,087
TOTAL	4,950	4,235	3,124	1,296	1,471	1,424	16,509

Table 4: Silverdale infrastructure costs by phase¹⁰

Phase	Roads	Water	Sanitary	Drainage	Water & sanitary extensions	TOTAL
Central Neighbourhood, South	\$109,350,000	\$16,660,000	\$8,760,000	\$40,770,000	\$10,440,000	\$185,980,000
Central Neighbourhood, North	\$52,206,120	\$14,769,192	-	\$8,780,967	-	\$75,756,279
West Neighbourhood, South	\$34,500,000	-	\$4,740,000	\$8,475,000	-	\$47,715,000
West Neighbourhood, North	\$26,550,000	\$460,000	-	\$18,105,000	-	\$45,115,000
East Neighbourhood, South	\$42,593,880	\$520,808	-	\$15,069,033	-	\$58,183,721
East Neighbourhood, North	\$23,800,000	\$460,000	-	\$4,500,000	-	\$28,760,000
TOTAL	\$289,000,000	\$32,870,000	\$13,500,000	\$95,700,000	\$10,440,000	\$441,510,000

Of the almost 17,000 residential units proposed for Silverdale, about 3,000 (20%) are single family, about 8,000 (49%) are townhomes, and about 5,000 (30%) are apartments. Some single family residences included in Table 2 above are already present and therefore excluded from Table 3; this includes all “single family – rural” units and 21 “single family – estate” units. The total number of new dwellings proposed is 16,509. The largest phase by number of dwellings is Central Neighbourhood South followed by Central Neighbourhood North, and the smallest is West Neighbourhood North followed by East Neighbourhood North.

The Project Team identified almost \$442 million of infrastructure costs consisting of major roads, water, sanitary, drainage, and road extensions. The most expensive phase of infrastructure is Central Neighbourhood South followed at a distant second by Central Neighbourhood North. The least expensive phase is East Neighbourhood North, followed by West Neighbourhood North. Like other costs discussed in this report, these infrastructure cost estimates represent the magnitude of these expenses if they took place in 2019. In practice these costs will increase over time and will also be increased to reflect a 50% contingency¹² plus associated soft costs.

The Project Team identified the following phasing sequence, which is believed to be the most logistically viable under current market conditions:

¹⁰ Approximated by GPRA based on information received at the precinct level from EKISTICS

¹¹ Dwellings in mixed-use areas are apartments.

¹² Upon instruction from the Project Team

Figure 3: Silverdale phasing sequence (indicated year is year serviced)

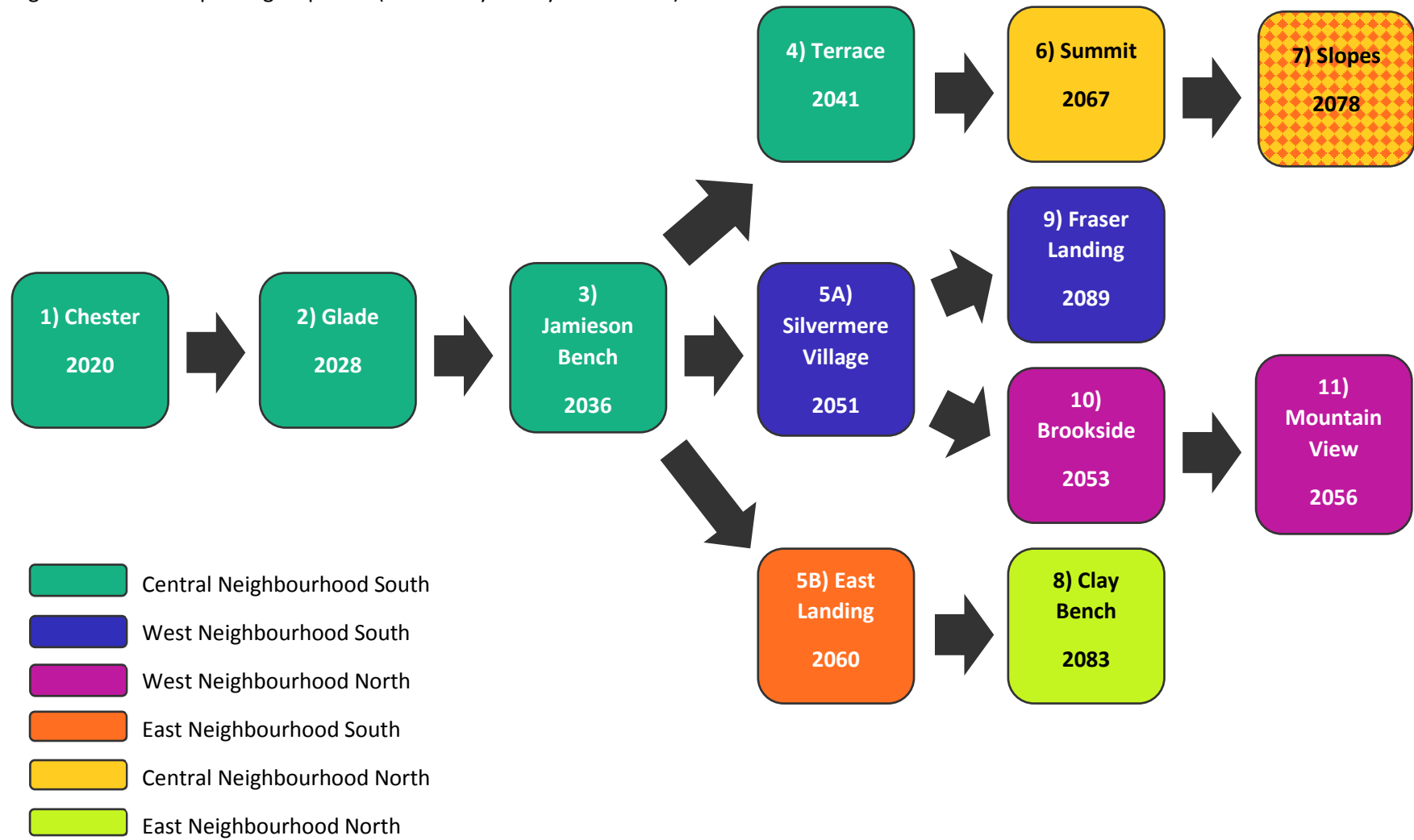


Figure 4: Silverdale phasing sequence (black item is year serviced; coloured years represent development)



Figures 3 & 4 above show that development in Silverdale is anticipated to take place for the remainder of the twenty-first century, roughly from southeast to northwest. Note that although Brookside and Mountain View (West Neighbourhood North) are technically Phases 10 and 11 respectively, these phases consist mostly of single family development and therefore it makes no sense for them to wait until the 2090s to be developed. GPRA assumes that these phases will be serviced as soon as the market is ready for their single family products in the 2050s. Their multi-family components (all townhome) will mostly wait until after Fraser Landing to be developed and sold; this will take place during the 2090s. The Slopes precinct is partly in East Neighbourhood South and partly in Central Neighbourhood North, hence the checkered appearance in Figures 3 & 4 above.

2.2 Silverdale Financial Model: Scenarios

GPRA has analyzed three infrastructure cost recovery scenarios:

- Scenario 1 – Works & Services: In this scenario, the District requires each phase of development to pay for all infrastructure required during that phase, even if later phases benefit from that infrastructure.
- Scenario 2 – Standard DCCs: In this scenario, all phases contribute the same amount to this fund on a per dwelling basis, with the DCC rate escalating over time only to match inflation. When required, infrastructure spending comes out of the fund. When infrastructure cost requirements exceed the fund, the District must make up the difference by other means such as borrowing.
- Scenario 3 – DCC Front-End Agreements: In this scenario, each phase pays the DCC amount identified in Scenario 2. However, when infrastructure cost requirements exceed the DCC fund, the developer of that phase makes up the difference instead of the District. The developer is then paid back either when DCC funds become available or in the form of DCC credits on future development. Note that there would be a substantial fee to the District to cover the cost of preparing such a front-end agreement (in the order of \$10,000 - \$20,000 depending on complexity). It should be noted that Front-End Agreements are contracts between the District and developer and their legality is only as good as the contract since the Local Government Act does not speak to them.

GPRA's method for analyzing these scenarios was to create a discounted cash flow financial model of all twelve precincts¹³ and therefore all six phases in each scenario (36 discounted cash flows in all) under the assumption that each phase will be completed by a single developer but that the different phases might be completed by different developers. This might not be the case; the whole project might be completed by one developer or a single phase might be completed by multiple developers. However, since one purpose of this analysis was to evaluate the impact of different DCC policy options on development viability, this was the simplest and clearest approach for modelling purposes. In summary, GPRA assumes that Silverdale will be developed by six developers, one per phase. GPRA applies the same principle to this study's CAC analysis.

¹³ There are thirteen precincts, but only twelve of them require any development, hence twelve precincts mentioned here.

2.3 Silverdale Financial Model: Results

The calculated DCC rates for Silverdale – as employed in Scenarios 2 & 3 – are the rates at which the major infrastructure costs identified within the MIS are fully paid off by the time of the final DCC payment from Fraser Landing in 2089. These rates cover the following expenses¹⁴:

- All major infrastructure as itemized in Table 4, pg. 6
- Cost escalation
- A contingency of 50%
- Applicable soft costs of about 5%
- Annual interest of 2% when repaying the District or a front-ending developer.¹⁵

These DCCs only reflect infrastructure costs directly attributable to Silverdale. Other area-wide DCCs will also apply and are present in the financial model.

The appropriate rates indexed to 2019 cost estimates are as follows:

- Roads: \$32,409 per unit
- Water: \$3,686 per unit
- Sanitary: \$1,514 per unit
- Drainage: \$10,732 per unit
- Extensions: \$1,171 per unit
- **TOTAL: \$49,511 per unit**

Which can also be broken up as follows:

- Major infrastructure: \$26,744 per unit
- Contingency: \$13,372 per unit
- Soft costs: \$2,097 per unit
- Escalation and interest: \$7,298 per unit
- **TOTAL: \$49,511 per unit**

Note that these amounts are already included in the financial model either directly (Scenarios 2 or 3) or in the form of infrastructure costs (Scenario 1), and all phases of the project are viable with these rates. In other words, the proposed Silverdale development can easily bear the major infrastructure costs listed above in any scenario, even Scenario 1.

Of the three scenarios investigated in the previous analysis, Scenario 3 is the best scenario because it achieves all relevant policy goals – fairness between developers and low District financial burden – while still ensuring the viability of all phases.

¹⁴ If other expenses were included in the same DCC as these items, such as park-related expenses, those costs would be in addition to the total stated below. This section looks only at the costs for which GPRA received information during the MIS project, as listed below.

¹⁵ Including interest in DCC-repayment requires a Council resolution, a DCC Bylaw update, and approval by the Inspector of Municipalities. Interest is only approved in exceptional circumstances which include greenfield areas with no services, and as such a case can be made for Silverdale. GPRA assumes a low interest rate to help ensure approval from the Inspector.

3 Community Amenity Cost Analysis

This section deals exclusively with the capital costs of community amenities in Silverdale. The costs discussed here have no relation to or impact on taxation except indirectly (for example through interest on debt). The cost of operating and maintaining the infrastructure created through CACs is addressed in Section 4: Taxation Analysis.

3.1 Silverdale Community Amenity Costs

GPRA has received from the District estimates of the cost of community amenities in Silverdale, allowing us to investigate whether development in Silverdale can afford to pay for its own community amenities. The identified amenities are defined as follows:

- Park lands: The District requires development to contribute 5% of gross land area as publicly accessible parkland. Overall, this would amount to 162 ac in Silverdale¹⁶, which GPRA assumes is contributed automatically and does not count as a CAC. However, there is an additional 65 ac of park and community lands proposed in the land use plan, which GPRA assumes *would* count as an in-kind CAC. The District values parkland at \$1 million per ac. Therefore, the effective value of Silverdale's park and community lands for the purpose of CAC calculation is **\$65 million**. This represents not a transfer of cash but a transfer of land value to the District. Unless otherwise stated, no money changes hands for this land, but this \$65 million in value may still count towards a phase's overall CAC total for the purpose of calculation.
- Development of natural open space: \$83,750
- Development of neighbourhood parks: \$1,675,000
- Development of community parks: \$1,434,840
- Development of District parks: \$2,040,000
- Development of sports parks: \$4,750,000 in West Neighbourhood South
- Development of other parks: \$500,000 throughout all phases
- City-wide facilities: \$77,288,402
- Community facilities: \$2,923,430
- Neighbourhood facilities: \$1,118,677
- Fire: \$4,850,000 in Central Neighbourhood South

¹⁶ Based on a calculation that does not include the Sylvan precinct, as this area is not expected to contain any development or new community lands and will remain as it is today. The calculation is therefore: $3,244 \text{ ac} \times 5\% = 162.2 \text{ ac}$.

- West Coast Express Station: \$3,000,000 in West Neighbourhood South
- Transit Exchange: \$500,000 in East Neighbourhood South.

These costs may be allocated to the six development phases as follows:

Table 5: Silverdale community amenities by cost

Phase		Central Neighbourhood		West Neighbourhood		East Neighbourhood		TOTAL
		South	North	South	North	South	North	
Park land ¹⁷		\$17,098,171	\$18,840,630	\$27,568,875	\$1,534,263	-\$2,182,257	\$1,952,475	\$64,812,157
Park development	Natural open space ¹⁸	\$39,689	\$15,483	\$5,933	\$6,927	\$9,704	\$6,013	\$83,750
	Neighbourhood park ¹⁹	\$627,944	\$303,349	\$166,959	\$225,512	\$151,615	\$199,621	\$1,675,000
	Community park ²⁰	\$837,001	-	\$597,839	-	-	-	\$1,434,840
	District park ²¹	\$558,653	\$1,481,347	-	-	-	-	\$2,040,000
	Sports park	-	-	\$4,750,000	-	-	-	\$4,750,000
	Other parks ²²	\$169,376	\$99,140	\$102,421	\$45,323	\$43,621	\$40,119	\$500,000
City-wide facilities ²³		\$15,424,640	\$21,308,616	\$12,248,324	-	\$28,306,822	-	\$77,288,402
Community facilities ²⁴		\$583,436	\$805,997	\$463,292	-	\$1,070,704	-	\$2,923,430
Neighbourhood facilities ²⁵		\$223,257	\$308,422	\$177,283	-	\$409,715	-	\$1,118,677
Fire		\$4,850,000	-	-	-	-	-	\$4,850,000
West Coast Express Station		-	-	\$3,000,000	-	-	-	\$3,000,000
Transit exchange		-	-	-	-	\$500,000	-	\$500,000
Non-land total		\$23,313,996	\$24,322,355	\$21,512,052	\$277,763	\$30,492,180	\$245,753	\$100,164,099
Non-land total per dwelling		\$4,710	\$5,730	\$6,886	\$214	\$20,773	\$173	\$6,067
GRAND TOTAL		\$40,412,167	\$43,162,986	\$49,080,927	\$1,812,025	\$28,309,923	\$2,198,228	\$164,976,256
Total cost per dwelling		\$8,165	\$10,168	\$15,710	\$1,399	\$19,249	\$1,544	\$9,993

¹⁷ \$1 million per ac of park and community lands beyond 5% of gross land area. Note that unless specified this represents a transfer of land to the District rather than a cash payment but is included here for completeness. Note also that East Neighbourhood South is proposed to contain less than 5% of its gross land area as park and community lands, which is represented here as a negative item.

¹⁸ \$65 per ac of natural open space

¹⁹ \$11,000 per ac of neighbourhood park

²⁰ \$85,200 per ac of community park (community parks determined in conversation with District staff)

²¹ \$115,400 per ac of District park (District parks determined in conversation with District staff)

²² \$2,200 per ac of park and community lands

²³ \$4.74 million per ac of community / arts centre lands

²⁴ \$179,000 per ac of community / arts centre lands

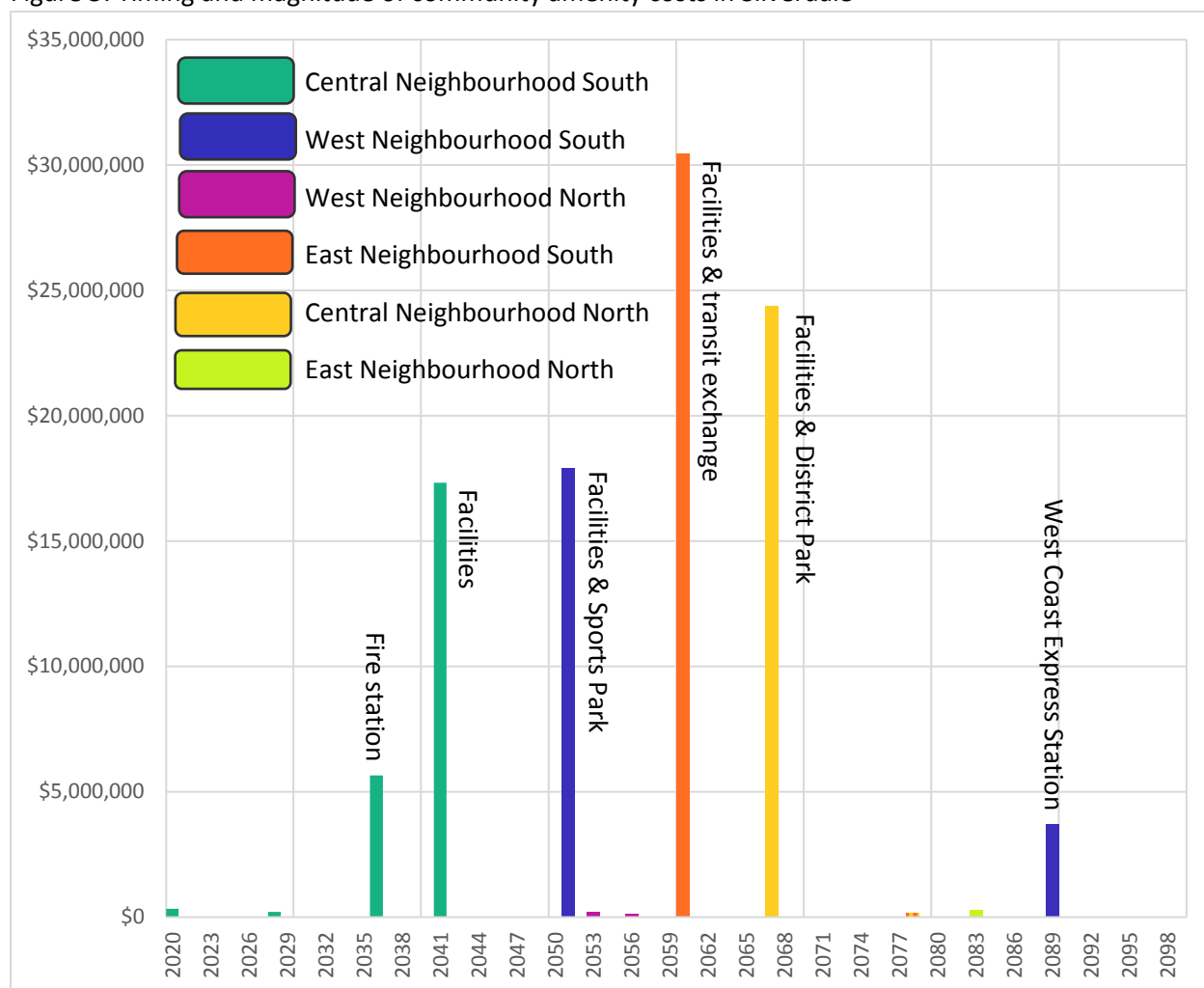
²⁵ \$68,600 per ac of community / arts centre lands

Excluding the value of land, the cost of amenities in Silverdale is expected to total \$100 million. Including land (beyond 5% of gross land area), this cost rises to \$165 million. The value of community amenities in Silverdale is about \$10,000 per dwelling with some phases falling above and some falling below this average. East Neighbourhood South is a particularly amenity-rich phase because it will contain the largest community / arts centre and a transit exchange. Other Neighbourhoods that fall above this average include West Neighbourhood South and Central Neighbourhood North. Neighbourhoods that fall below this average include West Neighbourhood North and East Neighbourhood North.

GPRA assumes that park land would transfer to the District directly, representing neither cash expense nor cash revenue to the developers. All other costs would escalate over time and be subject to contingencies as defined in the previous report.

The timing, magnitude, and nature of these costs is indicated below.

Figure 5: Timing and magnitude of community amenity costs in Silverdale²⁶



²⁶ Figure 5 does not include the monetary value of park and community lands above 5% of gross land area; it is limited to true costs. All costs are shown at present values with no escalation over time and no contingency factors.

3.2 CAC Financial Analysis

3.2.1 CAC Scenarios

GPRA has investigated the impact on Silverdale’s development economics of different approaches that the District might apply to community amenity financing:

- Scenario 1: Phases pay for their own community amenities as defined above²⁷
- Scenario 2: In this scenario, the District establishes a Silverdale Amenity Fund. Phases make the minimum CAC contributions such that all amenities are funded, and all project phases contribute the same CAC per dwelling unit plus reasonable escalation over time. When required, amenity spending comes out of the fund. When amenity cost requirements exceed the fund, the District must make up the difference by other means such as borrowing
- Scenario 3: The most equitable approach (most equal CAC contributions per unit) not requiring external funding sources such as District debt.

The District may not take CACs paid by one developer and use them to compensate another developer (unlike DCCs), so a “latecomer fee” approach to CACs is unavailable here. The District can enter phased development agreements (PDAs) with developers giving them CAC credits for future projects, but that’s impossible to model in this context because this financial model is agnostic regarding the identity of each developer. So even though there other policy options available to the District, they’re not analyzed in detail here.

Scenario 1 has the advantage of being very simple and would not even require a CAC policy per se: each phase of development would simply provide its own amenities. The disadvantage of Scenario 1 is that it is unequitable, placing a larger burden on some phases than others.

Scenario 2 is more equitable (in that it distributes community amenity costs evenly) but would require the District to expand its policy and create a Silverdale Community Amenity Fund. During periods when total amenity costs exceeded total amenity charges collected, the District would be required to make up the difference by other means such as borrowing. Unlike DCC-eligible costs, front-end agreements could not be used to transfer CAC funds from one developer to another. This approach would also place an even greater burden on Central Neighbourhood South, which is already disproportionately burdened with infrastructure costs. These issues are discussed in more detail below.

Scenario 3 is a compromise between Scenarios 1 & 2: CAC contributions are variable but less variable and therefore more equitable than Scenario 1, while still being high enough in all cases to make outside funding unnecessary and to not place additional burdens on Central Neighbourhood South, which has a disproportionate infrastructure burden. This is described in more detail below.

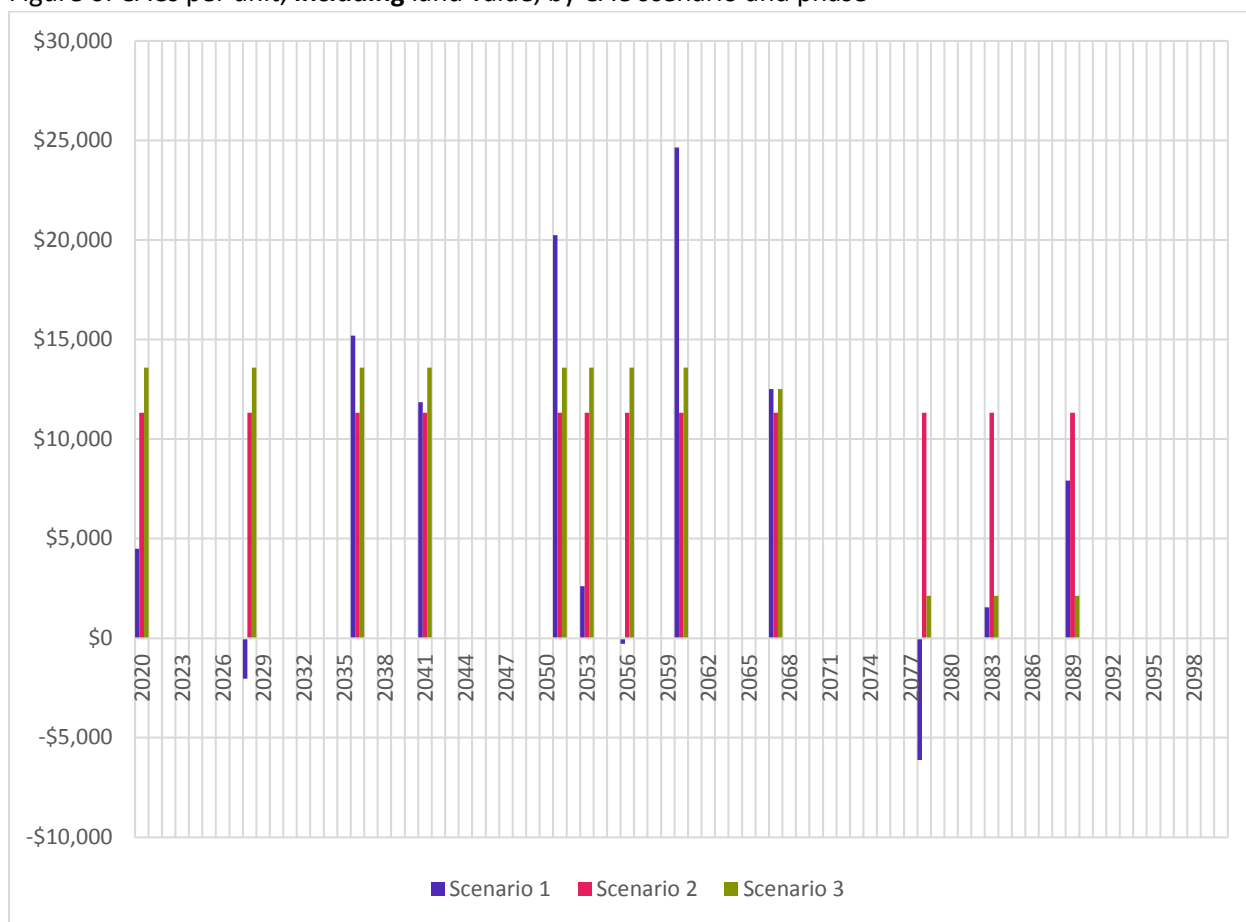
²⁷ This is not industry-standard but is included here in the interest of completeness.

3.2.2 CAC Rates

Table 6: Non-land CAC contributions by phase and CAC scenario²⁸

Phase	Total non-land CACs			Non-land CACs per unit		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2 ²⁹	Scenario 3
Central Neighbourhood, South	\$23,313,996	\$38,921,420	\$23,313,996	\$4,710	\$7,863	\$4,710
Central Neighbourhood, North	\$24,322,355	\$29,202,130	\$27,998,407	\$5,730	\$6,879	\$6,596
West Neighbourhood, South	\$21,512,052	\$7,789,315	\$14,854,893	\$6,886	\$2,493	\$4,755
West Neighbourhood, North	\$277,763	\$13,129,250	\$16,067,252	\$214	\$10,134	\$12,401
East Neighbourhood, South	\$30,492,180	\$18,827,416	\$19,684,948	\$20,733	\$12,802	\$13,385
East Neighbourhood, North	\$245,753	\$14,160,488	\$1,059,438	\$173	\$9,946	\$777
TOTAL	\$100,164,099	\$122,030,019	\$102,978,934	\$6,067	\$7,392	\$6,238

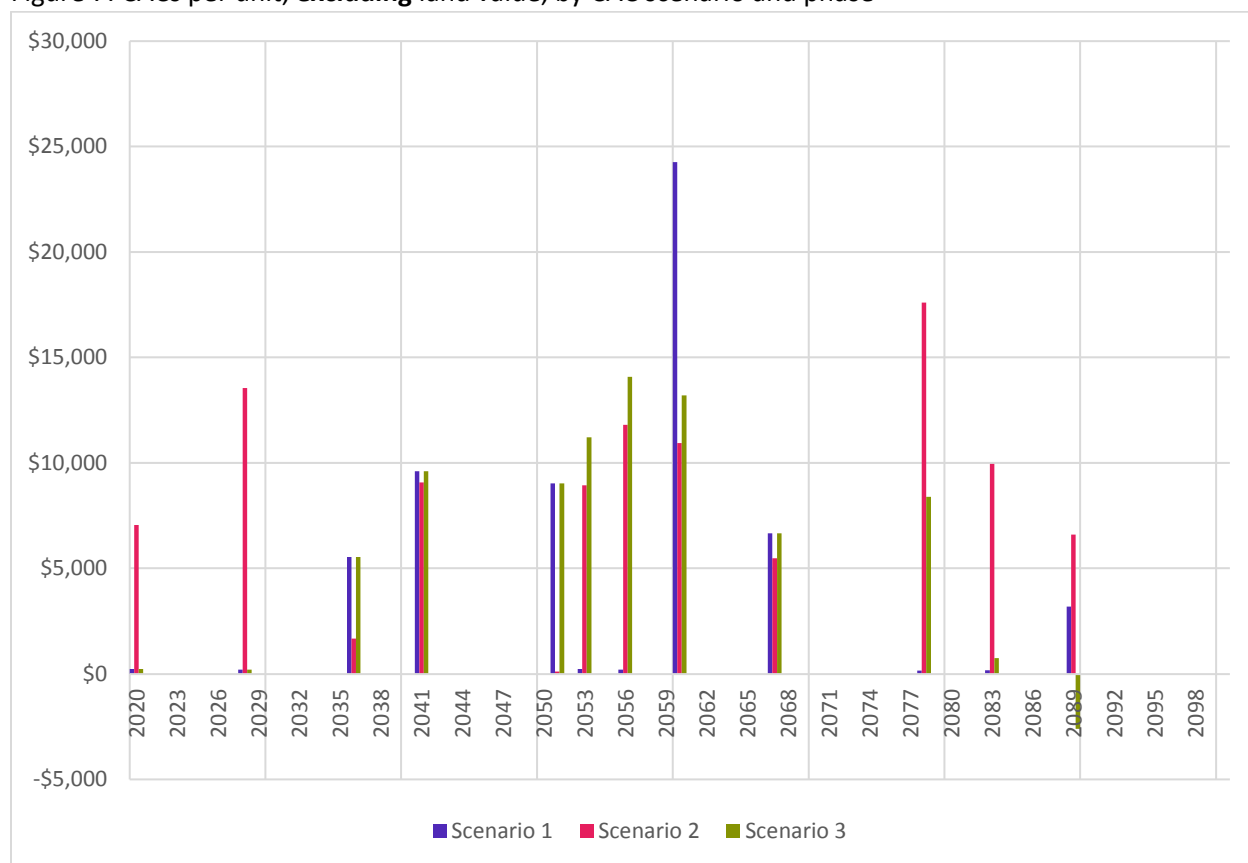
Figure 6: CACs per unit, **including** land value, by CAC scenario and phase³⁰



²⁸ In practice these amounts are increased to reflect contingencies and cost escalation over time, but these adjustments are excluded here for ease of comparison.

²⁹ The CAC rates per dwelling for Scenario 2 differ because each phase contributes different amounts of parkland; after the value of parkland in excess of 5% is added to this amount, each phase contributes the same \$11,318 per dwelling.

³⁰ This graph excludes escalation over time. Negative values are possible due to precincts with less than 5% gross land area allocated to park and community lands. Without a cash-in-lieu mechanism (Scenario 1 and Scenario 3 in some cases), such precincts may be “net negative”, meaning only that the value of amenities they provide is worth less than the cash-in-lieu they should provide for missing parkland.

Figure 7: CACs per unit, **excluding** land value, by CAC scenario and phase³¹

Developer obligations in Scenario 1 would vary by phase but would average \$6,067 per dwelling plus parkland contributions, with some phases paying less than \$300 per dwelling (West Neighbourhood North and East Neighbourhood North) and other phases paying more. The East Neighbourhood South phase would pay by far the most per dwelling (\$20,733). This is indicated in purple in Figures 6 & 7 above.

In Scenario 2, each phase contributes the same CAC per dwelling of \$11,318 which includes parkland contributions above 5% of gross land area. This is indicated in magenta in Figure 6 above. GPRA assumes that this rate would increase by 2% annually. This is the lowest amount that would cover all of Silverdale's amenity costs as well as the interest on any required District debt (also assumed to be 2% annually). Park contributions above 5% of gross land area would not involve cash transfer but would count towards each phase's \$11,318 per unit total. The cash amounts representing the non-land portion of each phase's contribution would average \$7,392 per dwelling and range from \$2,493 per dwelling for West Neighbourhood South to \$12,802 per dwelling for East Neighbourhood South. This is indicated in magenta in Figure 7 above. The CAC rate identified in Scenario 2 is greater than the average rate identified in Scenario 1 because it covers cost escalation and interest.

³¹ This graph excludes escalation over time. The only negative item here is the Fraser Landing precinct of West Neighbourhood South. This precinct has less than 5% of its gross land area dedicated to park and community lands, and therefore shows up as a "net negative" item. However, West Neighbourhood South as a whole exceeds the 5% requirement, so this developer would not need to pay cash-in-lieu under the current framework.

Scenario 3 would proceed as follows:

- The project's first several phases (2020 – 2060) are able to pool their resources and achieve a CAC rate only slightly higher than the equitable rate calculated for Scenario 2 – namely \$13,586 per unit instead of \$11,318 per unit (including land in both cases). This covers the amenity costs of Central Neighbourhood South, West Neighbourhood North, the Silvermere Village precinct of West Neighbourhood South, and the East Landing precinct of East Neighbourhood South.
- After the East Landing precinct has developed, there will be no CAC funds left over to subsidize the next precinct, which is the Summit precinct of Central Neighbourhood North (starting in 2067). This precinct also has more than its share of amenity costs, but for it to pay any less than the cost of its own amenities would require outside funding. Paying for its own amenities is therefore necessary. Its non-land contribution would be about \$24 million in 2019 dollars, or \$6,658 per unit.
- After Summit, the last three areas to develop are the Slopes precinct (split between East Neighbourhood South and Central Neighbourhood North) starting in 2077, East Neighbourhood North starting in 2082, and finally the Fraser Landing precinct of West Neighbourhood South, starting in 2088. Of these, it is Fraser Landing – the last precinct to develop – that has the most amenity costs per dwelling. This creates the opportunity for these three areas to equalize their CACs just as the first set of phases did earlier. In particular, all three areas would contribute amenity value of about \$2,116 per unit, including land. The Slopes precinct would pay for its own modest infrastructure and contribute extra in CACs (about \$6.9 million or \$8,391 per unit). East Neighbourhood North would then pay for its own modest infrastructure and contribute extra in CACs (about \$1.1 million or \$744 per unit). The funds from these first two phases would then contribute to Fraser Landing's amenity costs.

To summarize Scenario 3, the most equitable approach to community amenity financing that would not require external funds would be for Silvermere Village to pay for its own amenities and for the remaining areas to form two CAC "pools" to equalize cost burdens, which would be divided based on timing:

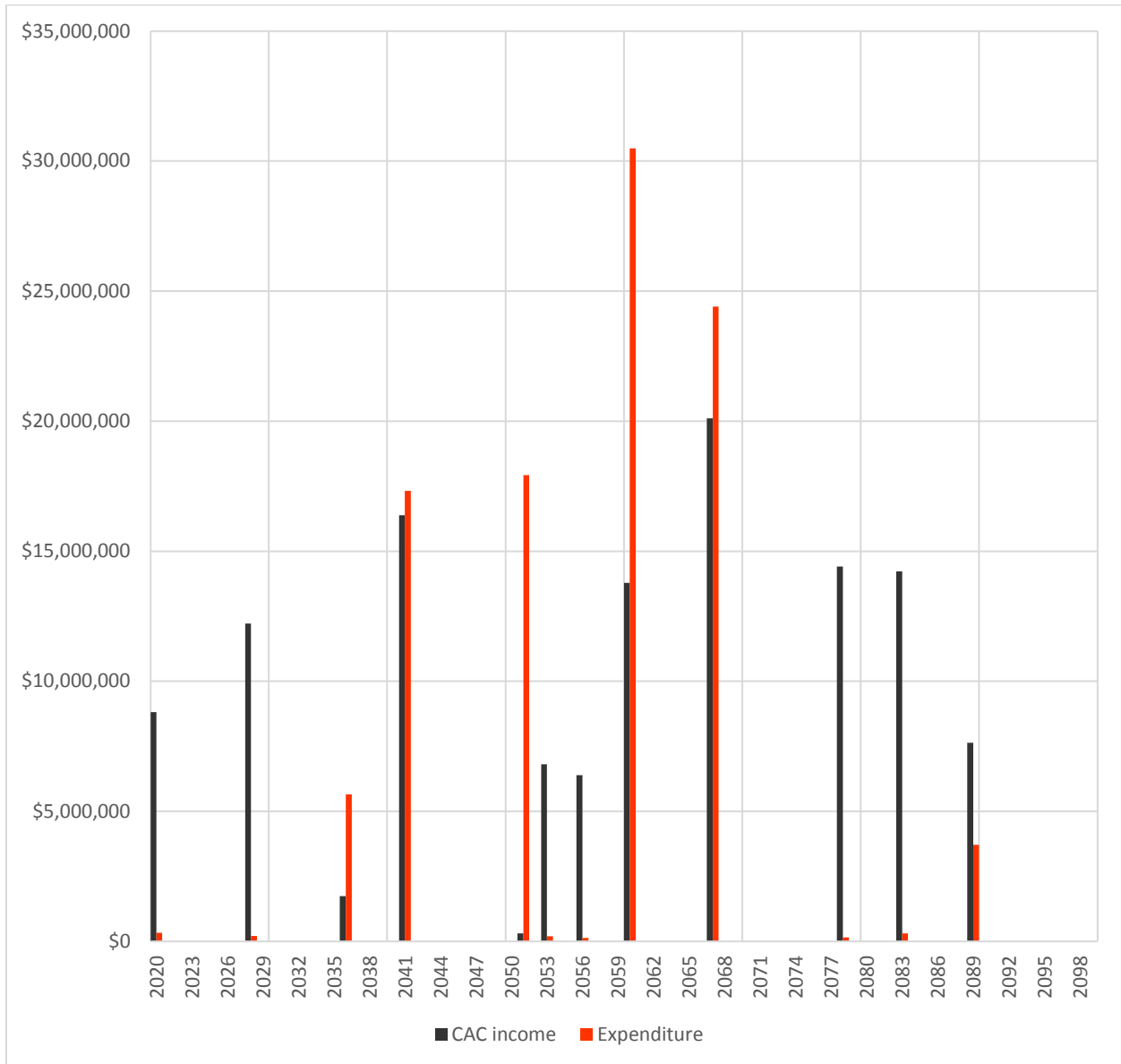
- The first pool would develop from the 2020s to 2060s. These areas would make total amenity contributions (including land) of \$13,586 per unit and would consist of:
 - Central Neighbourhood South
 - West Neighbourhood North
 - The Silvermere Village precinct of West Neighbourhood South
 - The East Landing precinct of East Neighbourhood South
- The second pool would develop during the 2070s – 2090s. These areas would make total amenity contributions (including land) of \$2,116 per unit and would consist of:
 - The Slopes precinct (split between East Neighbourhood South and Central Neighbourhood North)
 - East Neighbourhood North
 - The Fraser Landing precinct of West Neighbourhood South.

3.2.3 Financial Outcomes

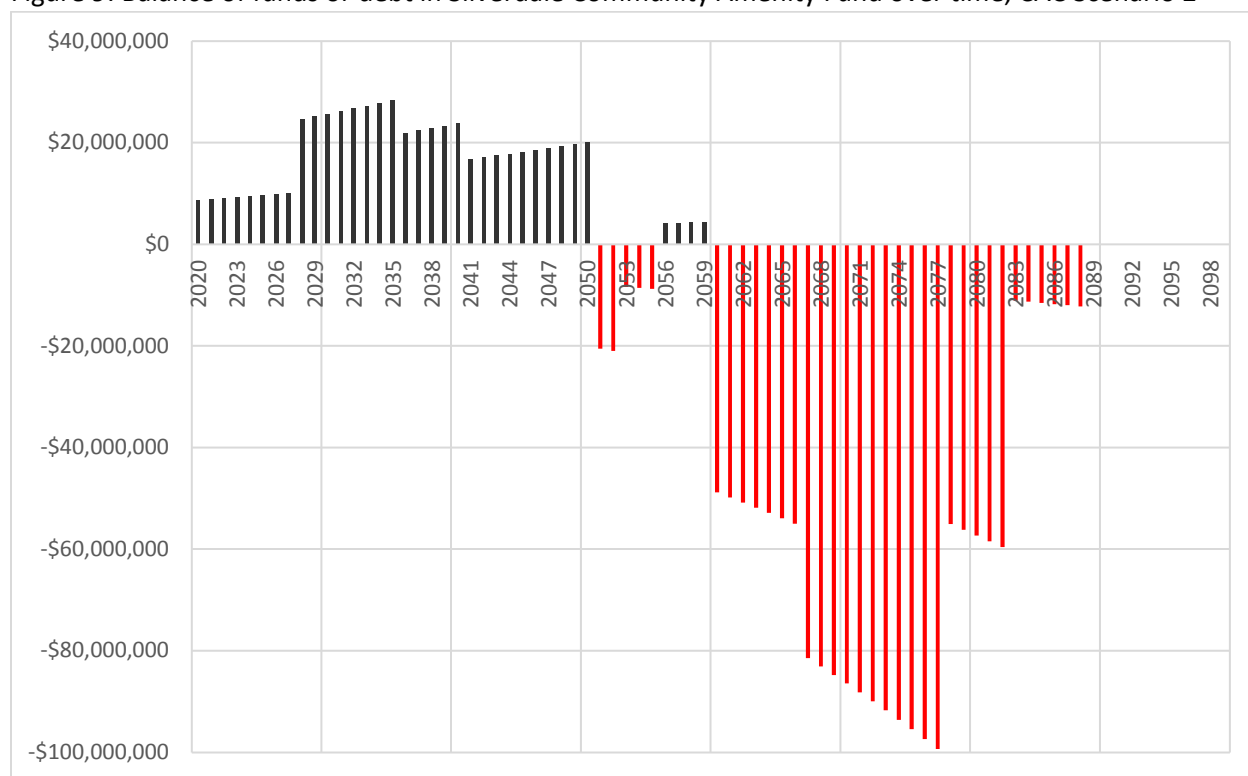
In CAC Scenario 1, all phases are viable despite carrying their own amenity cost burdens.

In CAC Scenario 2, all of Silverdale's community amenities are financed and no project phase is disproportionately burdened. All phases are viable. Another issue of this approach is that it requires external funding (such as District debt) to temporarily make up any funding shortfalls until enough CAC funds become available. The balance of CAC income versus amenity expenditure by phase is compared in Figure 8 below, and the resulting balance of funds or debt in the Silverdale Community Amenity Fund is indicated in Figure 9 below.

Figure 8: CAC income versus amenity expenditure by precinct in CAC Scenario 2³²



³² Does not include escalation over time.

Figure 9: Balance of funds or debt in Silverdale Community Amenity Fund over time, CAC Scenario 2³³

As Figure 8 above indicates, in CAC Scenario 2, some phases of development in Silverdale will generate more CAC funds than their amenities consume, increasing the Community Amenity Fund or decreasing District debt. Other phases will consume more CAC funds than they generate which will have the opposite effect. Figure 9 adds escalation over time as well as interest to produce a forecast of the balance of funds (positive or negative) in the Silverdale Community Fund over time in CAC Scenario 2.

From 2020 to 2050 the balance is positive: development phases tend to generate more funds than they consume and there is always enough CAC funding available to cover the cost of amenities. But starting in 2051 with the development of the Silvermere Village precinct of West Neighbourhood South, the capital cost of amenities exceeds the accumulated CAC funds available and requires the District to find outside sources of funding (represented here as debt). The East Landing precinct of East Neighbourhood South in particular will require tens of millions of dollars of amenity costs in about 2060. From 2060 to 2077 this debt will grow and then from 2078 to 2089 this debt will be gradually retired as CAC funds from later phases of development become available. According to this projection, the maximum positive balance in the fund would be about \$28 million in 2035 and the maximum debt load would be about \$99 million in 2077.

An assist factor bringing in funding from other sources such as general tax revenue or CACs from developments elsewhere in Mission would decrease the financial burden on Silverdale and / or decrease the District's debt load, but GPRA has not speculated on this point as the political viability of such an approach is unclear.

³³ This figure *does* include escalation over time as well as interest.

As discussed above, CAC Scenario 3 attempts to strike a balance between CAC Scenarios 1 & 2 by pooling resources as much as possible while still not requiring outside funding or overburdening Central Neighbourhood South. This requires Silvermere Village to pay for its own infrastructure while the other phases form pools to split community amenity costs. The projected balance of the Silverdale CAC fund over time is displayed in Figure 10 below.

Figure 10: Balance of funds in Silverdale Community Amenity Fund over time, CAC Scenario 3

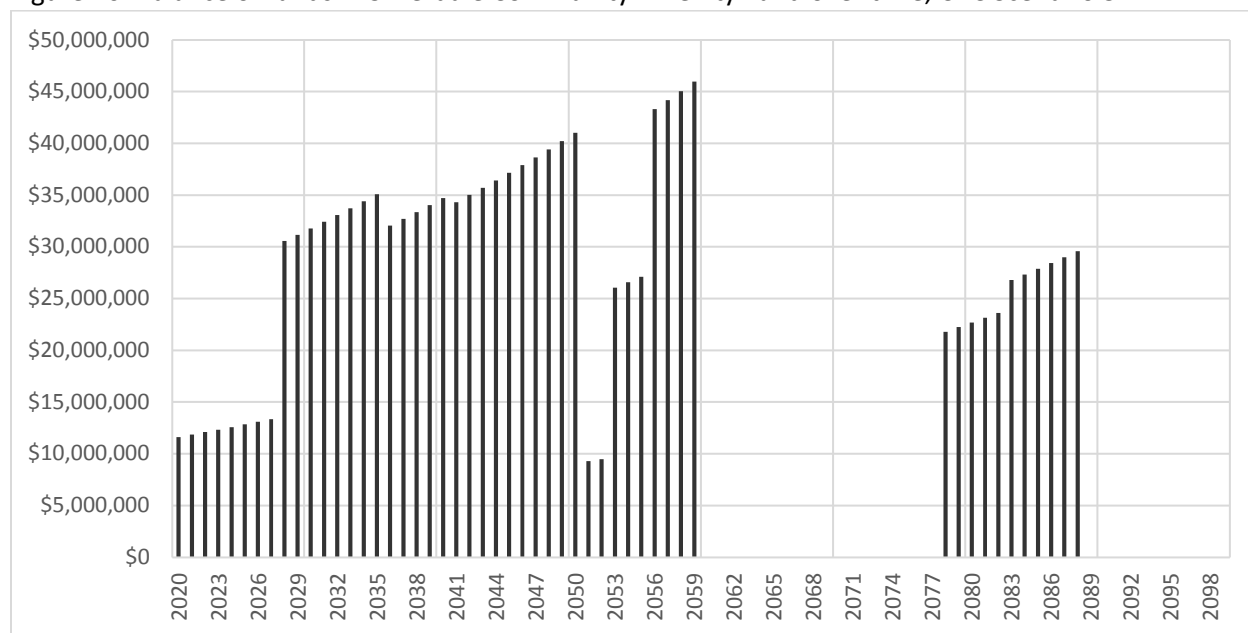


Figure 10 above reflects that until about 2060, all phases and precincts of Silverdale would contribute to the CAC fund and due to their higher CAC rate (compared to Scenario 2), this would not require any outside funding. During the 2060s and most of the 2070s the Community Amenity Fund would be empty as the Silvermere Village precinct of West Neighbourhood South would need to pay for its own amenities. In 2078 and 2083 the Slopes precinct and East Neighbourhood North respectively would contribute CAC funds which would go towards amenities in the Fraser Landing precinct of West Neighbourhood South.

CAC Scenario 3 is more equitable than CAC Scenario 1 but not as equitable as CAC Scenario 2. However, like CAC Scenario 1 it does not require external funding at any time.

In summary, the District may require all phases of development in Silverdale to pay for their own community amenities (Scenario 1), or the District may require each phase to contribute \$11,318 per dwelling, which includes park and community lands in excess of 5% of gross land area (Scenario 2). The first option would not require the District to find outside funding but would burden some phases more than others. The second option would be more equitable but would require the District to find outside funding in the mid-to-late twenty-first century. GPRA designed a third approach to combine the best elements of Scenarios 1 & 2. Scenario 3 is strictly better than Scenario 1 except for administrative obligations, but the choice between Scenario 2 and Scenario 3 requires the District to choose between maximum equality between phases (Scenario 2) and District debt avoidance (Scenario 3).

All phases of development are economically viable under either approach.

4 Taxation Analysis

GPRA has developed a model of evolving property values and municipal expenses in Silverdale and in the rest of Mission from now until the end of the twenty-first century (described in detail in the Appendix). In 2100 if developed as proposed, Silverdale is projected to make up 34% of Mission's property value, to provide 32% of Mission's property tax revenue, and to generate about 30% of the District's municipal expenses. Figure 11 below shows Silverdale's share of the District's property value and municipal expenses over time.

Figure 11: Silverdale share of total district property taxes and expenses over time

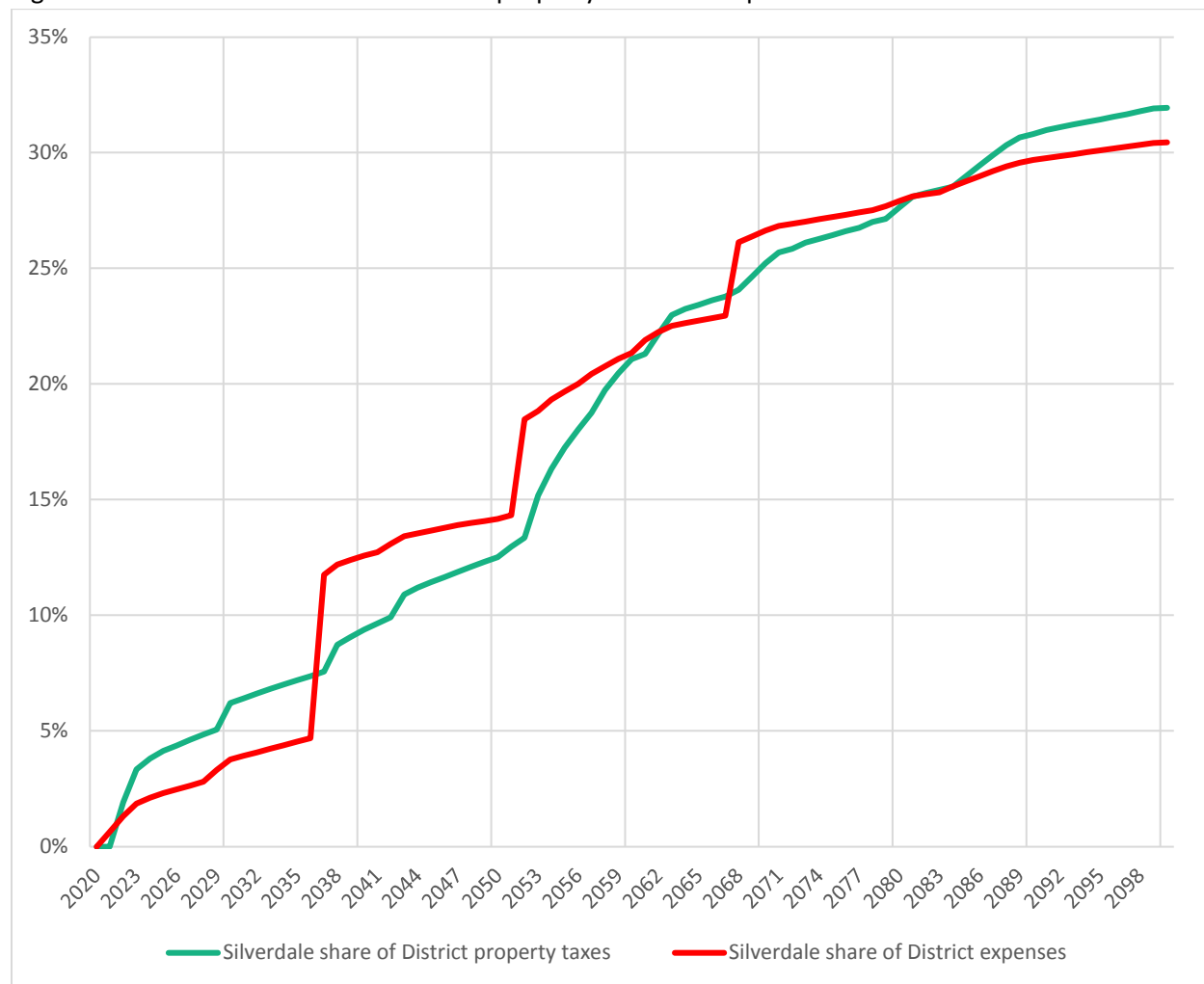
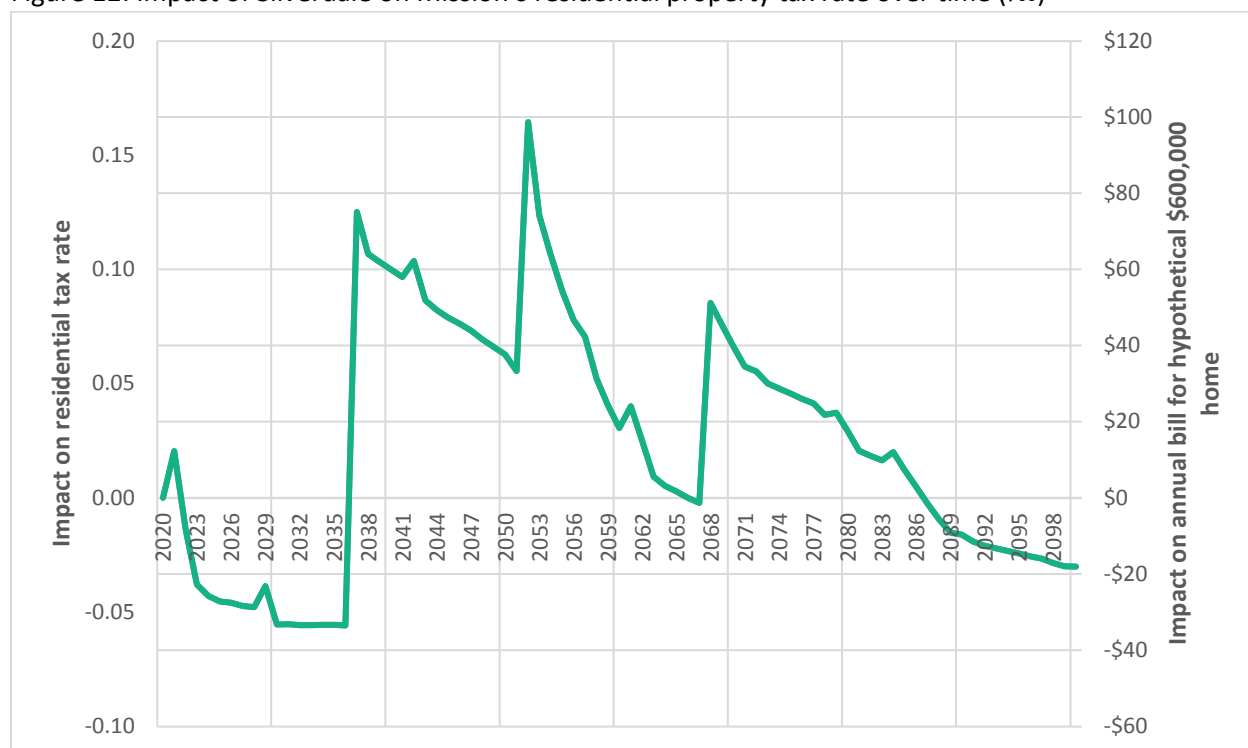


Figure 11 shows that the development of Silverdale is expected to have a negative impact in 2021, from 2037 – 2062, and from 2068 – 2080. And it is expected to have a positive impact from 2022 – 2036, 2063 – 2067, and from 2081 onward.

The property tax rate must be adjusted to ensure that tax revenue covers expenses. The development of Silverdale will therefore lead to an increased tax rate in years when its share of expenses exceeds its share of tax revenue; and to a decreased tax rate in years when the reverse is true. The impact of Silverdale on Mission's property tax rate over time is indicated below.

Figure 12: Impact of Silverdale on Mission's residential property tax rate over time (%)³⁴

From 2023 – 2036, the development of Silverdale has a generally positive impact and is expected to decrease Mission's residential property tax rate by about 0.05%, or about \$28 for a \$600,000 home. Then from 2037 – 2086 Silverdale has a generally negative impact, causing an increase in Mission's property tax rate by an average of 0.06%, or about \$35 for a \$600,000 home. Finally, from 2087 – 2100, Silverdale will have a positive impact and is expected to decrease Mission's property tax rate by an average of 0.02%, or about \$13 on a \$600,000 home. Within these overall trends there are short-term spikes and fluctuations, mostly due to the introduction of new municipal facilities.

The fluctuations in Figure 12 above indicate years when Silverdale's impact on the property tax rate are more positive or more negative. It is possible to smooth these fluctuations by imagining that the District will set aside funds in years when Silverdale would otherwise decrease the tax rate and then use these funds in years when Silverdale would increase the tax rate (paying or receiving 2% interest on the balance in a given year). Doing this still produces a shortfall over the 80-year period analyzed. However, by the same token it is also possible to measure how much higher the property tax rate would have to be to eliminate this shortfall, thereby reducing the difference between the two scenarios to a single figure: the average difference in tax rates such that the two scenarios "break even" by year 2100.³⁵

³⁴ Includes taxes in the general, police, drainage, and library categories. Excludes waste management because this is charged as a flat rate rather than a mill rate.

³⁵ For Mission to literally take this approach would require outside funding such as District debt during the second half of the twenty-first century. GPRA knows this is not Mission's preferred approach, so a variable tax rate over time as shown in Figure E is more realistic. However, District staff requested the calculation of a single number that reflects that average increase in property tax from Silverdale, and this approach is the clearest and simplest approach to estimating that number.

This amount is a tax rate increase of about 0.02% for residential properties and proportional increases for other property types, which amounts to about \$12.28 per year for a hypothetical \$600,000 home. This is the amount that Mission's property taxes would need to be increased so that increased revenues from Silverdale offset increased expenses from Silverdale between now and 2100 and may be viewed as the "average annual tax increase from Silverdale".

Note as indicated in Figure 29, pg. 49 (in the Appendix) that property values in Silverdale generally keep pace with municipal expenses in Silverdale. The reason Silverdale's development will tend to cause an increase in tax rates in Mission is that compared to the rest of Mission, it contains a larger share of residential property which pays a lower tax rate.

At build-out, based on the draft land use densities, it is expected that taxation will cover operational and maintenance costs.

5 Conclusion

This report has truly contained three separate analyses with three separate conclusions, summarized below.

5.1 Development Cost Charges

The appropriate DCC rates for Silverdale indexed to 2019 cost estimates are as follows:

- Roads: \$32,409 per unit
- Water: \$3,686 per unit
- Sanitary: \$1,514 per unit
- Drainage: \$10,732 per unit
- Extensions: \$1,171 per unit
- **TOTAL: \$49,511 per unit**

Which can also be broken up as follows:

- Major infrastructure: \$26,744 per unit
- Contingency: \$13,372 per unit
- Soft costs: \$2,097 per unit
- Escalation and interest: \$7,298 per unit
- **TOTAL: \$49,511 per unit**

5.2 Community Amenity Costs

Excluding the value of land, the cost of amenities in Silverdale is expected to total \$100 million. Including land (beyond the required contribution of 5% of gross land area, which does not count as a CAC), this cost rises to \$165 million.

GPRA has investigated the impact on Silverdale's development economics of different approaches that the District might apply to community amenity financing:

- Scenario 1: Phases pay for their own community amenities as defined above³⁶
- Scenario 2: In this scenario, the District establishes a Silverdale Amenity Fund. Phases make the minimum CAC contributions such that all amenities are funded, and all project phases contribute the same CAC per dwelling unit plus reasonable escalation over time. When required, amenity spending comes out of the fund. When amenity cost requirements exceed the fund, the District must make up the difference by other means such as borrowing
- Scenario 3: The most equitable approach (most equal CAC contributions per unit) not requiring external funding sources such as District debt.

³⁶ This is not industry-standard but is included here in the interest of completeness.

Scenario 1 has the advantage of being very simple and would not even require a CAC policy per se: each phase of development would simply provide its own amenities. The disadvantage of Scenario 1 is that it is unequitable, placing a larger burden on some phases than others.

Scenario 2 is more equitable (in that it distributes community amenity costs evenly) but would require the District to expand its policy and create a Silverdale Community Amenity Fund. During periods when total amenity costs exceeded total amenity charges collected, the District would be required to make up the difference by other means such as borrowing. Unlike DCC-eligible costs, front-end agreements could not be used to transfer CAC funds from one developer to another.

Scenario 3 is a compromise between Scenarios 1 & 2: CAC contributions are variable but less variable and therefore more equitable than Scenario 1, while still being high enough in all cases to make outside funding unnecessary.

Table 6: Non-land CAC contributions by phase and CAC scenario³⁷

Phase	Total non-land CACs			Non-land CACs per unit		
	Scenario 1	Scenario 2	Scenario 3	Scenario 1	Scenario 2 ³⁸	Scenario 3
Central Neighbourhood, South	\$23,511,879	\$39,158,075	\$23,511,879	\$4,750	\$7,911	\$4,750
Central Neighbourhood, North	\$24,492,061	\$29,405,087	\$28,173,433	\$5,770	\$6,927	\$6,637
West Neighbourhood, South	\$21,636,951	\$7,938,686	\$14,989,956	\$6,926	\$2,541	\$4,798
West Neighbourhood, North	\$329,560	\$13,191,197	\$18,608,892	\$254	\$10,182	\$14,363
East Neighbourhood, South	\$30,550,977	\$18,897,734	\$22,156,881	\$20,773	\$12,850	\$15,066
East Neighbourhood, North	\$302,670	\$14,228,558	\$1,128,958	\$213	\$9,994	\$793
AVERAGE	\$100,824,099	\$122,819,336	\$108,570,000	\$6,107	\$7,440	\$6,577

Developer obligations in Scenario 1 would vary by phase but would average \$6,067 per dwelling plus parkland contributions, with some phases paying less than \$300 per dwelling (West Neighbourhood North and East Neighbourhood North) and other phases paying more. The East Neighbourhood South phase would pay by far the most per dwelling (\$20,733).

In Scenario 2, each phase contributes the same CAC per dwelling of \$11,318 which includes parkland contributions above 5% of gross land area. GPRA assumes that this rate would increase by 2% annually. This is the lowest amount that would cover all of Silverdale's amenity costs as well as the interest on any required District debt (also assumed to be 2% annually). Park contributions above 5% of gross land area would not involve cash transfer but would count towards each phase's \$11,318 per unit total. The cash amounts representing the non-land portion of each phase's contribution would average \$7,392 per dwelling and range from \$2,493 per dwelling for West Neighbourhood South to \$12,802 per dwelling for East Neighbourhood South. The CAC rate identified in Scenario 2 is greater than the average rate identified in Scenario 1 because it covers cost escalation and interest.

Scenario 3 is the most equitable approach to community amenity financing that would not require external funds would be for the Silvermere Village precinct of West Neighbourhood South to pay for the

³⁷ In practice these amounts are increased to reflect contingencies and cost escalation over time, but these adjustments are excluded here for ease of comparison.

³⁸ The CAC rates per dwelling for Scenario 2 differ because each phase contributes different amounts of parkland; after the value of parkland in excess of 5% is added to this amount, each phase contributes the same \$11,366 per dwelling.

remaining areas to form two CAC “pools” to equalize cost burdens, which would be divided based on timing:

- The first pool would develop from the 2020s to 2060s. These areas would make total amenity contributions (including land) of \$13,586 per unit and would consist of:
 - Central Neighbourhood South
 - West Neighbourhood North
 - The Silvermere Village precinct of West Neighbourhood South
 - The East Landing precinct of East Neighbourhood South
- The second pool would develop during the 2070s – 2090s. These areas would make total amenity contributions (including land) of \$2,116 per unit and would consist of:
 - The Slopes precinct (split between East Neighbourhood South and Central Neighbourhood North)
 - East Neighbourhood North
 - The Fraser Landing precinct of West Neighbourhood South.

In summary, the District may require all phases of development in Silverdale to pay for their own community amenities (Scenario 1), or the District may require each phase to contribute \$11,318 per dwelling, which includes park and community lands in excess of 5% of gross land area (Scenario 2). The first option would not require the District to find outside funding but would burden some phases more than others. The second option would be more equitable but would require the District to find outside funding in the mid-to-late twenty-first century. GPRA designed a third approach to combine the best elements of Scenarios 1 & 2. Scenario 3 is strictly better than Scenario 1 except for administrative obligations, but the choice between Scenario 2 and Scenario 3 requires the District to choose between maximum equality between phases (Scenario 2) and District debt avoidance (Scenario 3).

All phases of development are economically viable under either approach.

5.3 Taxation Analysis

GPRA has developed a model of evolving property values and municipal expenses in Silverdale and in the rest of Mission from now until the end of the twenty-first century. In 2100 if developed as proposed, Silverdale is projected to make up 34% of Mission’s property value, to provide 32% of Mission’s property tax revenue, and to generate about 30% of the District’s municipal expenses. Figure 11 below shows Silverdale’s share of the District’s property value and municipal expenses over time.

Figure 11: Silverdale share of total district property taxes and expenses over time

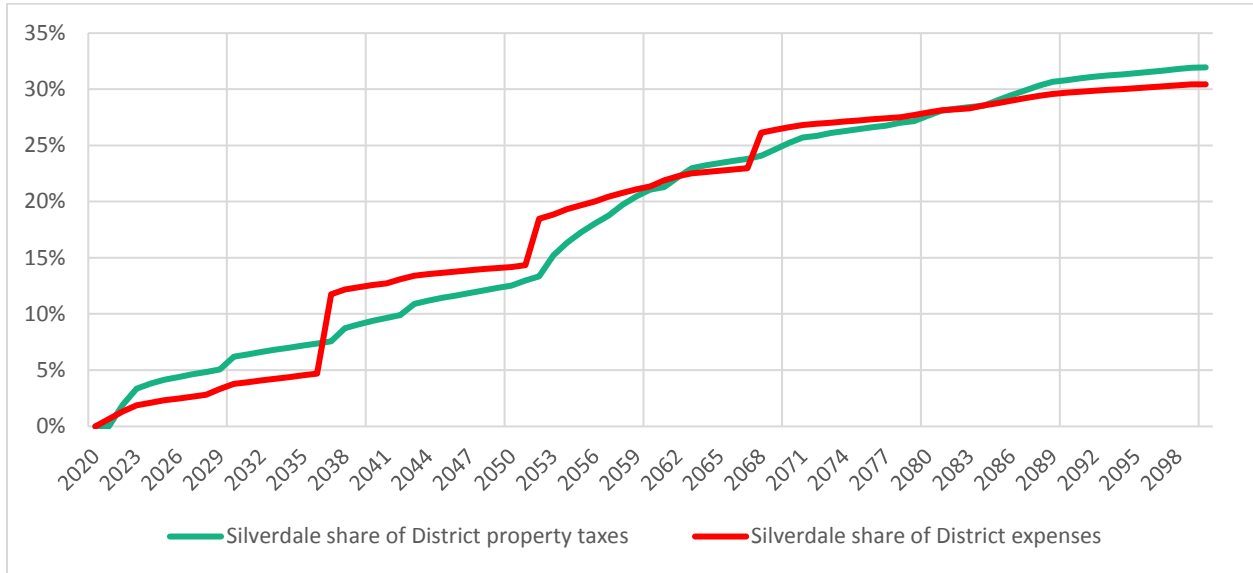
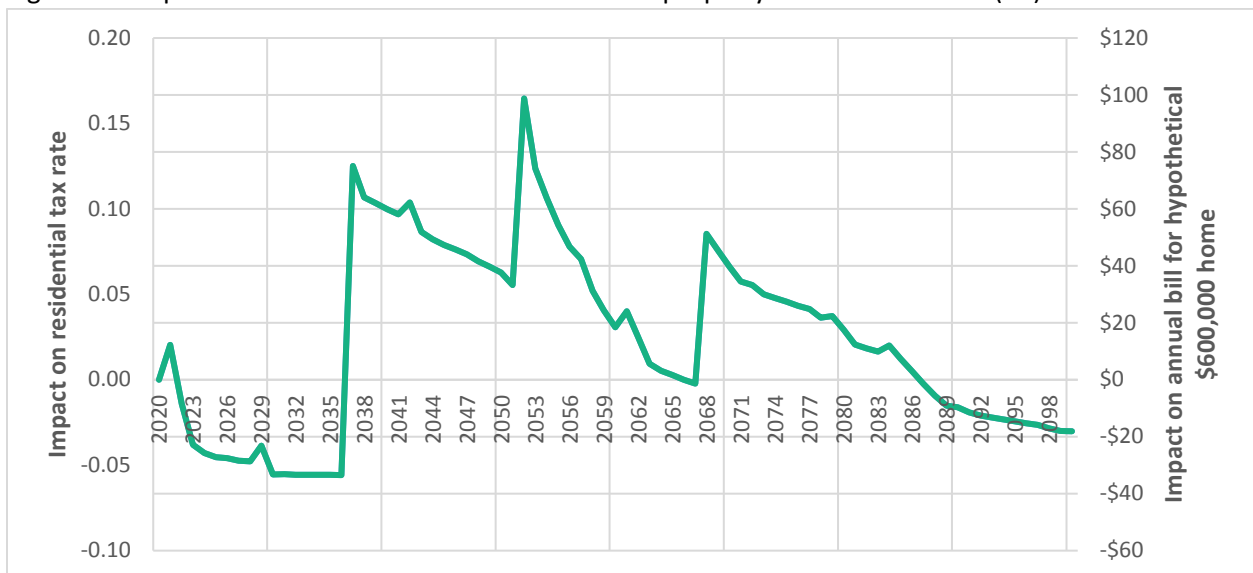


Figure 11 shows that the development of Silverdale is expected to have a negative impact in 2021, from 2037 – 2062, and from 2068 – 2080. And it is expected to have a positive impact from 2022 – 2036, 2063 – 2067, and from 2081 onward.

The property tax rate must be adjusted to ensure that tax revenue covers expenses. The development of Silverdale will therefore lead to an increased tax rate in years when its share of expenses exceeds its share of tax revenue; and to a decreased tax rate in years when the reverse is true. The impact of Silverdale on Mission's property tax rate over time is indicated below.

Figure 12: Impact of Silverdale on Mission's residential property tax rate over time (%)³⁹

³⁹ Includes taxes in the general, police, drainage, and library categories. Excludes waste management because this is charged as a flat rate rather than a mill rate.

From 2023 – 2036, the development of Silverdale has a generally positive impact and is expected to decrease Mission’s residential property tax rate by about 0.05‰, or about \$28 for a \$600,000 home. Then from 2037 – 2086 Silverdale has a generally negative impact, causing an increase in Mission’s property tax rate by an average of 0.06‰, or about \$35 for a \$600,000 home. Finally, from 2087 – 2100, Silverdale will have a positive impact and is expected to decrease Mission’s property tax rate by an average of 0.02‰, or about \$13 on a \$600,000 home. Within these overall trends there are short-term spikes and fluctuations, mostly due to the introduction of new municipal facilities.

The fluctuations in Figure 12 above indicate years when Silverdale’s impact on the property tax rate are more positive or more negative. It is possible to smooth these fluctuations by imagining that the District will set aside funds in years when Silverdale would otherwise decrease the tax rate and then use these funds in years when Silverdale would increase the tax rate (paying or receiving 2% interest on the balance in a given year). Doing this still produces a shortfall over the 80-year period analyzed. However, by the same token it is also possible to measure how much higher the property tax rate would have to be to eliminate this shortfall, thereby reducing the difference between the two scenarios to a single figure: the average difference in tax rates such that the two scenarios “break even” by year 2100.⁴⁰

This amount is a tax rate increase of about 0.02‰ for residential properties and proportional increases for other property types, which amounts to about \$12.28 per year for a hypothetical \$600,000 home. This is the amount that Mission’s property taxes would need to be increased so that increased revenues from Silverdale offset increased expenses from Silverdale between now and 2100 and may be viewed as the “average annual tax increase from Silverdale”.

Note as indicated in Figure 29, pg. 49 (in the Appendix) that property values in Silverdale generally keep pace with municipal expenses in Silverdale. The reason Silverdale’s development will tend to cause an increase in tax rates in Mission is that compared to the rest of Mission, it contains a larger share of residential property which pays a lower tax rate.

At build-out, based on the draft land use densities, it is expected that taxation will cover operational and maintenance costs.

⁴⁰ For Mission to literally take this approach would require outside funding such as District debt during the second half of the twenty-first century. GPRA knows this is not Mission’s preferred approach, so a variable tax rate over time as shown in Figure 12 is more realistic. However, District staff requested the calculation of a single number that reflects that average increase in property tax from Silverdale, and this approach is the clearest and simplest approach to estimating that number.

Appendix – Detailed Taxation Analysis

This appendix presents the complete taxation analysis prepared by GPRA, including all methodological assumptions. It contemplates the future of municipal expenses and tax rates in Mission in the twenty-first century. It is not related to the capital costs of infrastructure, which are dealt with in Section 3. It seeks to determine the likely impact of Silverdale on Mission's overall expense burden, tax base, and therefore tax rates. This section addresses this question by defining and comparing two scenarios:

- 1) A future in which the development of Silverdale takes place
- 2) One in which the development of Silverdale does not take place.

Identifying the differences between these two scenarios will highlight Silverdale's impact on the District's finances.

A1 Historical Trends

Figure 13: Taxable property value in Mission over time

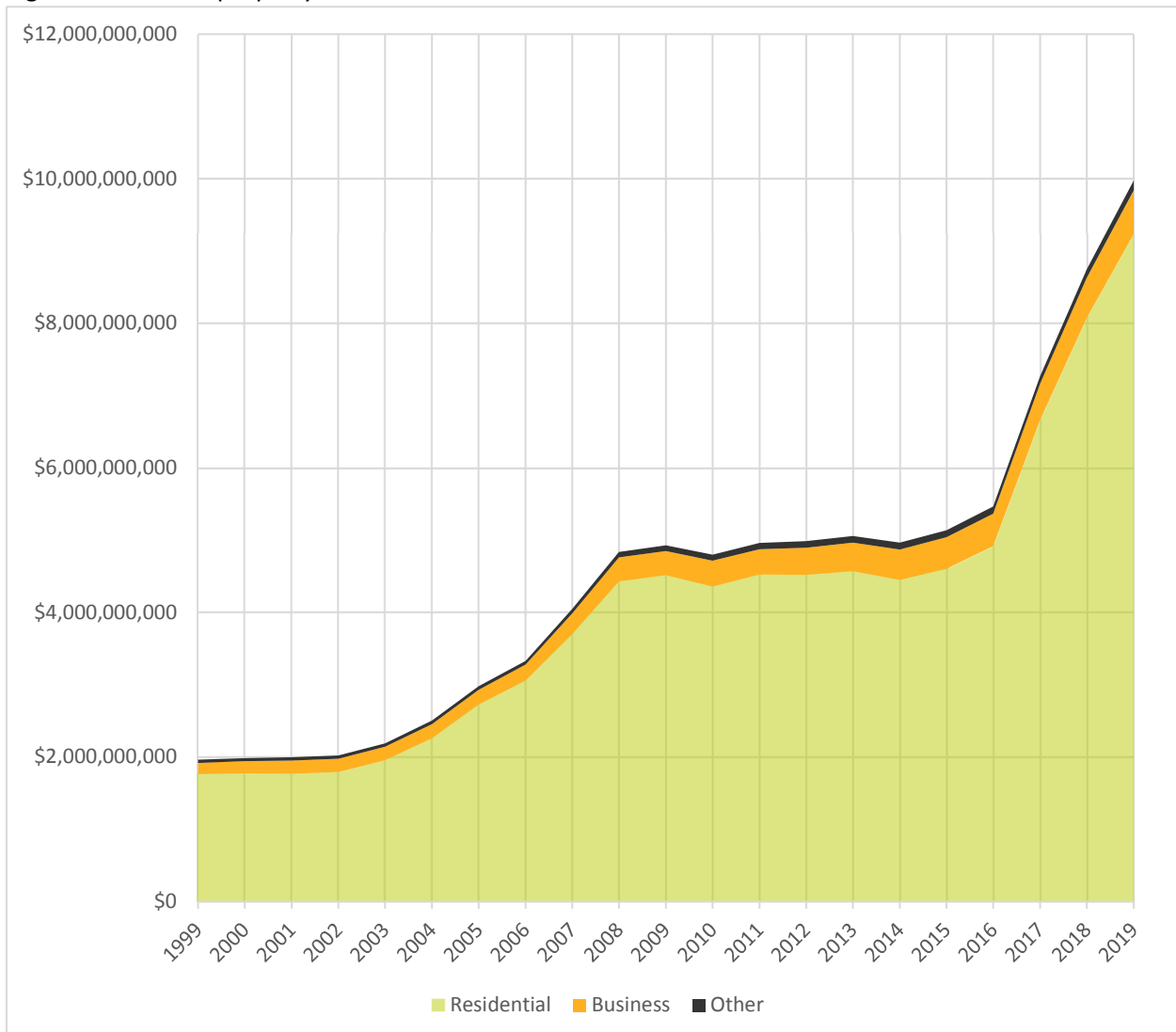


Table 7: Taxable property value in Mission over time

Year	Residential	Utilities	Industry	Business	Managed forest	Recreational & non-profit	Farm	TOTAL
1999	\$1.76 billion	\$7,598,060	\$24,169,573	\$153,618,092	-	\$8,541,855	\$3,146,302	\$1.96 billion
2000	\$1.78 billion	\$5,370,624	\$24,225,740	\$169,985,888	-	\$8,183,968	\$3,023,056	\$1.98 billion
2001	\$1.77 billion	\$5,878,279	\$28,090,136	\$180,600,975	-	\$8,146,341	\$3,104,784	\$1.99 billion
2002	\$1.79 billion	\$4,957,741	\$29,918,926	\$183,934,688	-	\$9,373,889	\$3,052,723	\$2.02 billion
2003	\$1.95 billion	\$5,014,171	\$30,198,781	\$187,472,044	-	\$9,183,714	\$3,071,054	\$2.19 billion
2004	\$2.26 billion	\$4,767,372	\$31,864,669	\$194,341,868	-	\$9,251,920	\$3,163,008	\$2.50 billion
2005	\$2.72 billion	\$5,026,585	\$34,210,045	\$202,896,671	-	\$9,709,023	\$3,066,356	\$2.98 billion
2006	\$3.06 billion	\$5,411,207	\$34,794,205	\$220,615,114	-	\$9,338,190	\$3,164,495	\$3.33 billion
2007	\$3.70 billion	\$5,641,023	\$42,313,523	\$286,926,956	-	\$12,569,609	\$3,077,572	\$4.05 billion
2008	\$4.43 billion	\$5,501,541	\$53,135,743	\$333,088,576	-	\$13,124,035	\$3,028,920	\$4.84 billion
2009	\$4.51 billion	\$4,687,805	\$56,621,851	\$336,127,760	-	\$12,628,266	\$3,094,126	\$4.93 billion
2010	\$4.36 billion	\$5,007,230	\$63,896,039	\$355,764,395	-	\$10,606,016	\$2,605,302	\$4.80 billion
2011	\$4.52 billion	\$5,054,628	\$67,333,993	\$351,259,761	-	\$13,149,943	\$3,128,018	\$4.96 billion
2012	\$4.52 billion	\$5,428,723	\$69,341,287	\$376,598,427	\$279,557	\$12,580,619	\$3,038,157	\$4.99 billion
2013	\$4.57 billion	\$5,584,482	\$71,371,129	\$396,970,919	\$271,863	\$12,248,845	\$2,981,204	\$5.06 billion
2014	\$4.45 billion	\$5,973,112	\$70,452,211	\$423,427,816	-	\$14,494,582	\$2,771,181	\$4.96 billion
2015	\$4.60 billion	\$6,076,047	\$72,954,660	\$436,655,961	-	\$11,160,940	\$2,987,604	\$5.13 billion
2016	\$4.91 billion	\$6,073,991	\$73,942,578	\$453,576,061	-	\$14,125,464	\$3,086,694	\$5.46 billion
2017	\$6.66 billion	\$5,786,909	\$78,636,741	\$504,698,623	-	\$15,481,225	\$3,138,320	\$7.27 billion
2018	\$8.07 billion	\$6,944,295	\$95,373,860	\$557,142,078	-	\$14,529,176	\$3,188,123	\$8.75 billion
2019	\$9.23 billion	\$6,911,806	\$115,190,979	\$604,957,890	\$137,298	\$16,294,294	\$3,053,948	\$9.98 billion

Figure 13 and Table 7 above show that from 1999 to 2019, Mission's total taxable property value increased from less than \$2 billion to almost \$10 billion. Residential property has always made up the vast majority of this total. Total residential property value was stable at about \$1.77 billion from 1999 – 2002 and then increased gradually to about \$4.4 billion from 2002 – 2008. Total residential property value was once again stable at about 4.5 billion from 2008 – 2016 but since then has increased rapidly, almost doubling to \$9.2 billion in 2019. This growth reflects both development and property value escalation (discussed below) and amounts to 423% growth during this period.

During this same period, the total value of utilities has remained fairly constant from \$5 million – \$7.5 million, the value of industry has grown by 377% from \$24 million – \$115 million, the value of business has grown by 294% from \$154 million – \$605 million, the value of recreational and non-profit property has grown by 91% from \$8.5 million – \$16 million, the value of farms has remained fairly constant at \$3 million, and the value of managed forests has remained negligible.

Figure 14: Total private dwellings and average property value per dwelling in Mission over time

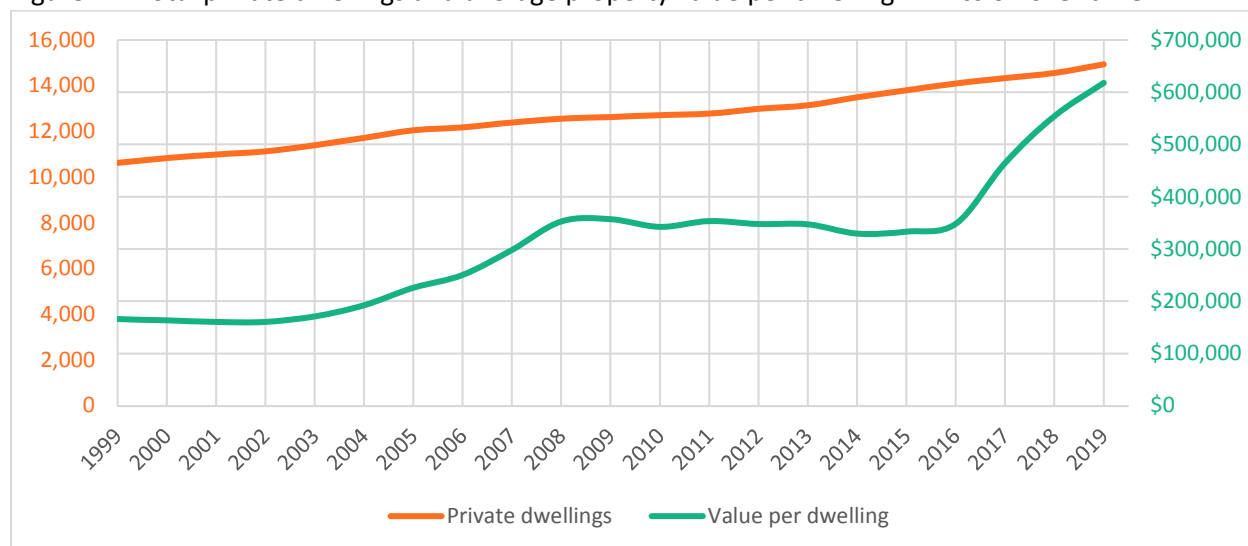


Table 8: Total private dwellings and average property value per dwelling in Mission over time

Year	Private dwellings		Value per dwelling	
	Total	Increase	Average	Increase
1999	10,630	1.3%	\$166,034	
2000	10,832	1.9%	\$163,642	-1.4%
2001	10,993	1.5%	\$160,869	-1.7%
2002	11,129	1.2%	\$160,947	0.0%
2003	11,394	2.4%	\$171,410	6.5%
2004	11,726	2.9%	\$192,687	12.4%
2005	12,051	2.8%	\$226,043	17.3%
2006	12,185	1.1%	\$250,878	11.0%
2007	12,394	1.7%	\$298,465	19.0%
2008	12,557	1.3%	\$352,731	18.2%
2009	12,635	0.6%	\$357,211	1.3%
2010	12,719	0.7%	\$342,704	-4.1%
2011	12,785	0.5%	\$353,678	3.2%
2012	12,989	1.6%	\$347,912	-1.6%
2013	13,148	1.2%	\$347,505	-0.1%
2014	13,493	2.6%	\$329,606	-5.2%
2015	13,798	2.3%	\$333,684	1.2%
2016	14,101	2.2%	\$348,426	4.4%
2017	14,332	1.6%	\$464,788	33.4%
2018	14,555	1.6%	\$554,543	19.3%
2019	14,934	2.6%	\$618,210	11.5%

Figure 14 and Table 8 above show that property value increase has been a more important factor than property development in the growth of Mission's residential tax base in the last twenty years. Residential development has occurred steadily, rarely falling below 1% per year or rising above 2.5%. By comparison, average property values have increased by more than 10% in 8 out of 20 years, have occasionally reached almost 20%, and in 2017 averaged 33%, more than making up the 6 out of 20 years that saw property value decline. In summary, the growth of Mission's nominal tax base has largely been the result of residential property value escalation.

Municipal data suggests that property taxes cover about 96% of municipal expenses in the general, police, drainage, and library categories and about 68% of waste management expenses. The remaining 4% and 32% respectively are covered by miscellaneous revenue items not enumerated here. The major portion funded by property taxes has grown over time as indicated in Figure 15 and Table 9:

Figure 15: Total tax revenue in selected categories over time

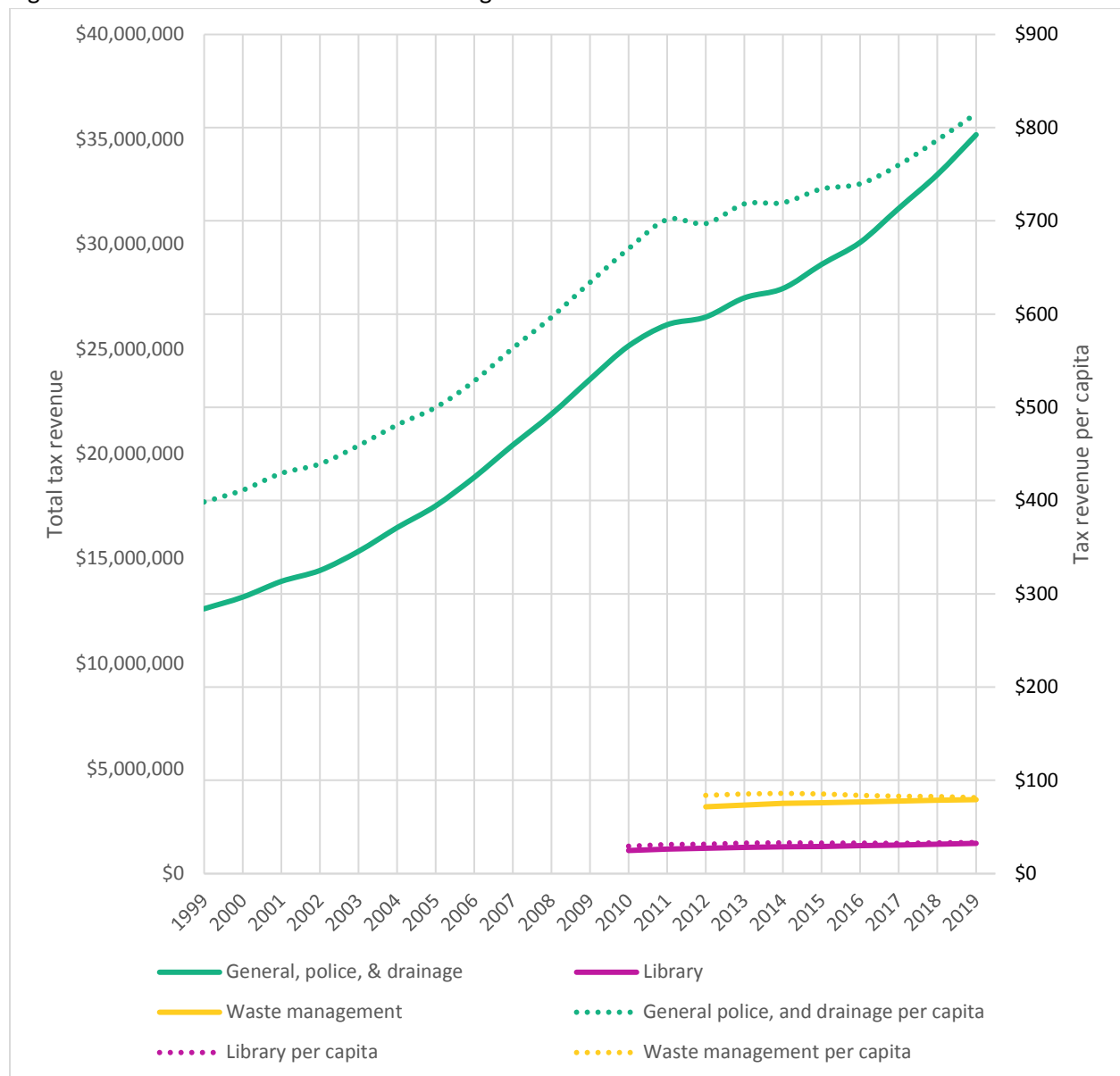


Table 9: Total tax revenue in selected categories over time

Year	General, police, and drainage		Library		Waste management	
	Total	Per capita	Total	Per capita	Total	Per capita
1999	\$12,624,879	\$399				
2000	\$13,189,672	\$411				
2001	\$13,929,948	\$429				
2002	\$14,458,304	\$440				
2003	\$15,362,280	\$459				
2004	\$16,493,371	\$481				
2005	\$17,534,338	\$500				
2006	\$18,897,691	\$528				
2007	\$20,425,603	\$564				
2008	\$21,898,538	\$597				
2009	\$23,561,400	\$634				
2010	\$25,149,274	\$670	\$1,105,957	\$29		
2011	\$26,164,959	\$701	\$1,165,781	\$31		
2012	\$26,528,760	\$697	\$1,203,577	\$32	\$3,189,320	\$84
2013	\$27,446,713	\$718	\$1,256,950	\$33	\$3,264,210	\$85
2014	\$27,887,340	\$720	\$1,277,519	\$33	\$3,344,794	\$86
2015	\$29,031,082	\$734	\$1,291,271	\$33	\$3,379,642	\$85
2016	\$30,088,845	\$740	\$1,330,483	\$33	\$3,411,537	\$84
2017	\$31,709,352	\$760	\$1,358,465	\$33	\$3,460,264	\$83
2018	\$33,321,244	\$787	\$1,405,987	\$33	\$3,503,086	\$83
2019	\$35,214,595	\$815	\$1,453,005	\$34	\$3,527,007	\$82

Between 1999 and 2019, per capita tax revenue in the general, police, and drainage categories has grown by about 3.6% per year from \$399 to \$815. Per capita tax revenue in the library category has grown by about 1.5% per year from \$29 to \$34. Per capita tax revenue in the waste management category has actually decreased slightly by about 0.4% per year, from \$84 to \$82.

The water and sewer categories are excluded from this analysis because GPRA lacks sufficient data to analyze trends.

To generate the taxes in the general, police, library, and drainage categories indicated above, Mission has typically set tax rates so that each property category produces the following share of the total tax required:

- 75% from residential
- 0.8% from utilities
- 3% from industry
- 20.5% from business
- 0.5% from recreational & non-profit
- 0.2% from farms.

Combining the property values indicated in Figure 13, pg. 29 and Table 7, pg. 30 with the total tax requirement indicated in Figure 15 and Table 9 above produced the tax rates indicated below.

Figure 16: Tax rates for general, police, & drainage (%)

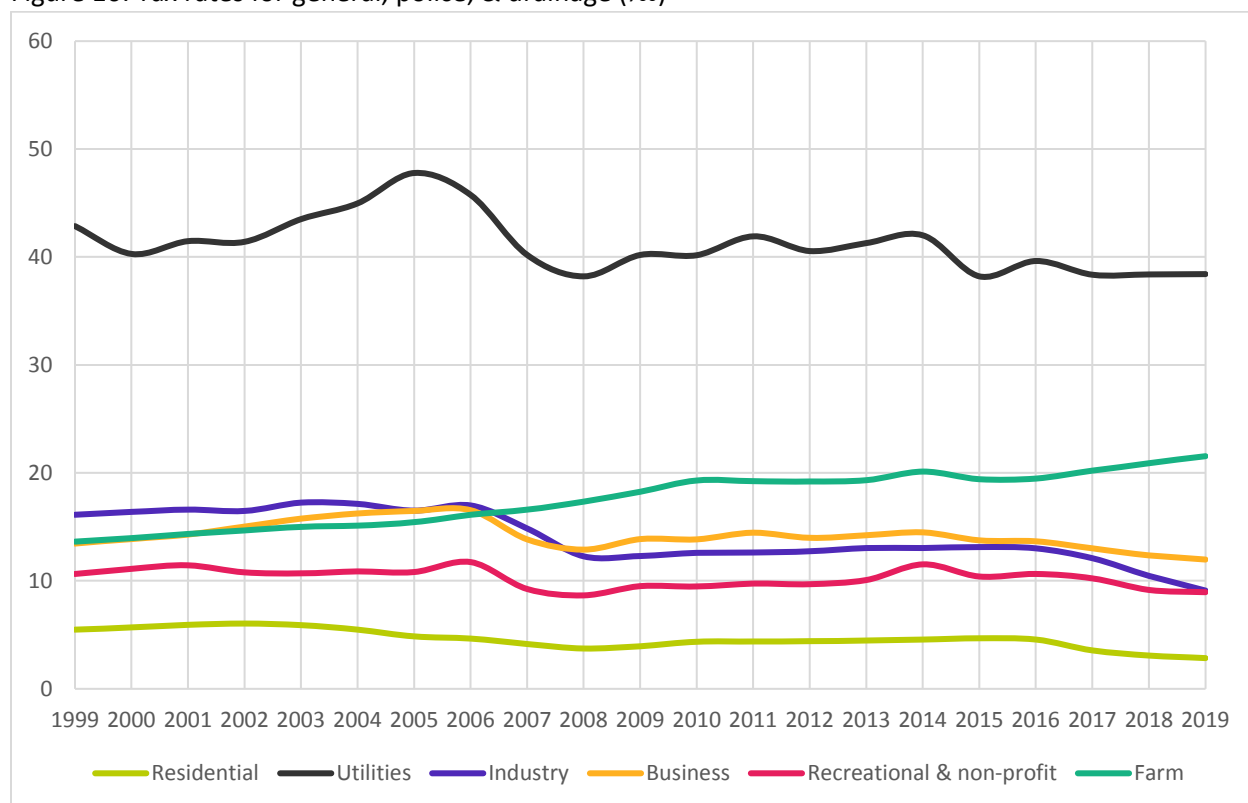


Table 10: Tax rates for general, police, & drainage (%)

Year	Residential	Utilities	Industry	Business	Recreational & non-profit	Farm
1999	5.4985	42.8691	16.1405	13.4781	10.6416	13.6430
2000	5.6880	40.2767	16.3879	13.8891	11.1204	13.9617
2001	5.9369	41.4703	16.6127	14.3001	11.4568	14.3572
2002	6.0570	41.4116	16.4788	15.0294	10.7968	14.6823
2003	5.9004	43.5055	17.2451	15.7661	10.7058	15.0069
2004	5.5004	44.9753	17.1328	16.2437	10.8745	15.1220
2005	4.8580	47.7899	16.5041	16.4803	10.8359	15.4395
2006	4.6599	45.7495	16.9999	16.5579	11.7375	16.1239
2007	4.1699	40.1920	14.8678	13.8602	9.2625	16.5923
2008	3.7408	38.2122	12.2813	12.9121	8.6766	17.3514
2009	3.9524	40.2088	12.3171	13.8651	9.5154	18.2756
2010	4.3734	40.1807	12.5951	13.8554	9.4849	19.3064
2011	4.3867	41.9291	12.6290	14.4583	9.7497	19.2387
2012	4.4200	40.5600	12.7400	13.9900	9.7000	19.2100
2013	4.4761	41.2844	13.0367	14.2360	10.0834	19.3338
2014	4.5776	42.0193	13.0625	14.4894	11.5439	20.1268
2015	4.7038	38.2237	13.1318	13.7624	10.4045	19.4343
2016	4.5747	39.6311	13.0222	13.6659	10.6509	19.4953
2017	3.5654	38.3567	12.0966	13.0058	10.2408	20.2082
2018	3.0921	38.3868	10.4813	12.3802	9.1737	20.9034
2019	2.8633	38.4150	9.1162	11.9872	8.9472	21.5626

Figure 17: Library tax rates (‰)

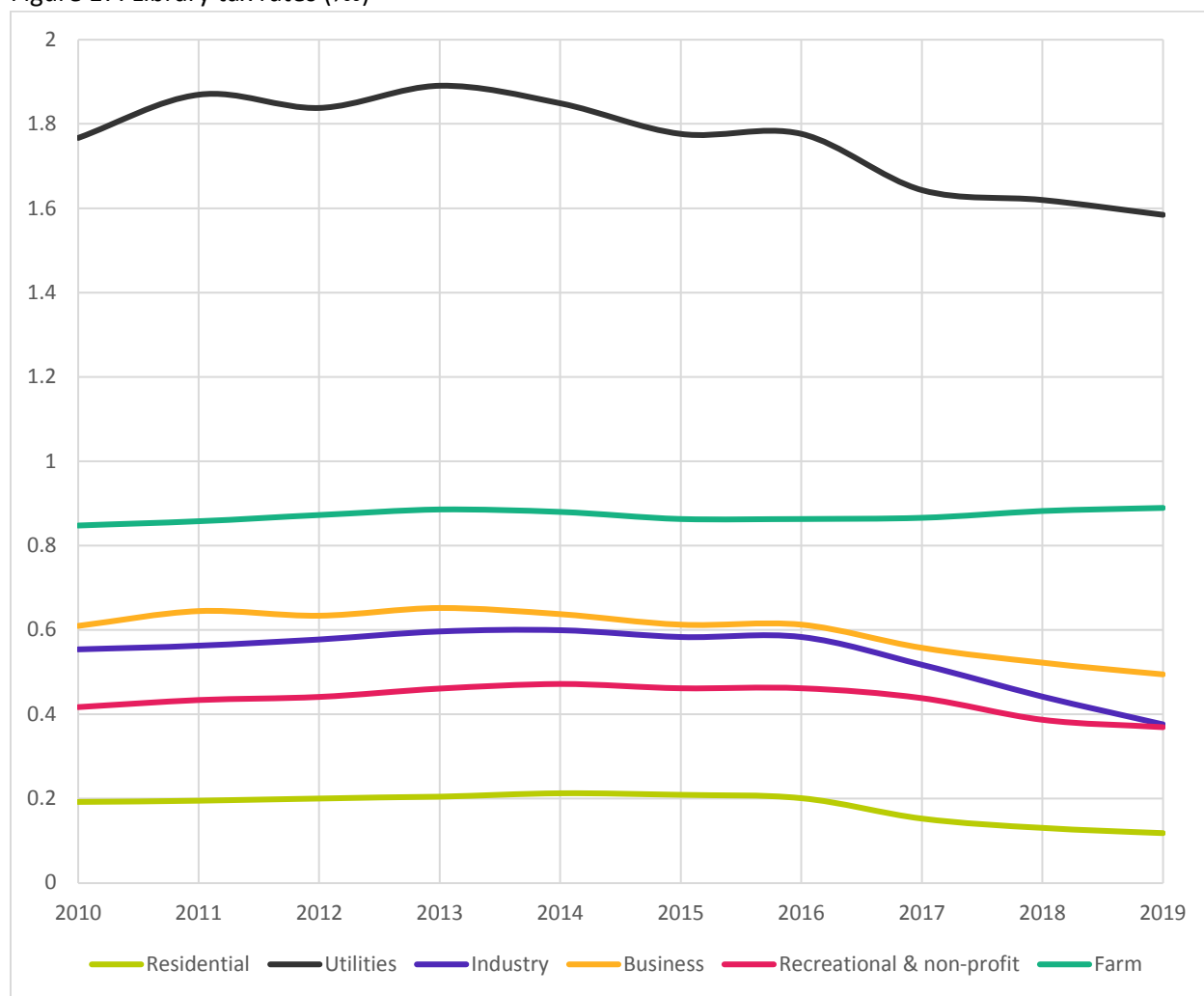


Table 11: Tax rates for general, police, & drainage (‰)

Year	Residential	Utilities	Industry	Business	Recreational & non-profit	Farm
2010	0.1923	1.7672	0.5538	0.6096	0.4173	0.8480
2011	0.1954	1.8699	0.5628	0.6448	0.4338	0.8578
2012	0.2006	1.8383	0.5777	0.6339	0.4413	0.8726
2013	0.2050	1.8905	0.5966	0.6519	0.4613	0.8856
2014	0.2125	1.8488	0.5993	0.6375	0.4718	0.8798
2015	0.2091	1.7763	0.5833	0.6125	0.4620	0.8634
2016	0.2014	1.7763	0.5833	0.6125	0.4620	0.8634
2017	0.1527	1.6434	0.5178	0.5575	0.4383	0.8660
2018	0.1305	1.6197	0.4423	0.5224	0.3871	0.8820
2019	0.1181	1.5850	0.3762	0.4947	0.3692	0.8897

Tax rates in Mission have generally decreased over the last twenty years as property value escalation and development have outpaced rising costs. Residential tax rates have fallen particularly fast and in 2019 were about half their 1999 value. Property tax rates have only increased for farms because this property type decreased in total value during this period.

Waste management tax revenue is not calculated as a portion of property value but rather as a flat fee per owner-occupied dwelling.

Figure 18: Owner occupied dwellings vs. Waste management fee in Mission

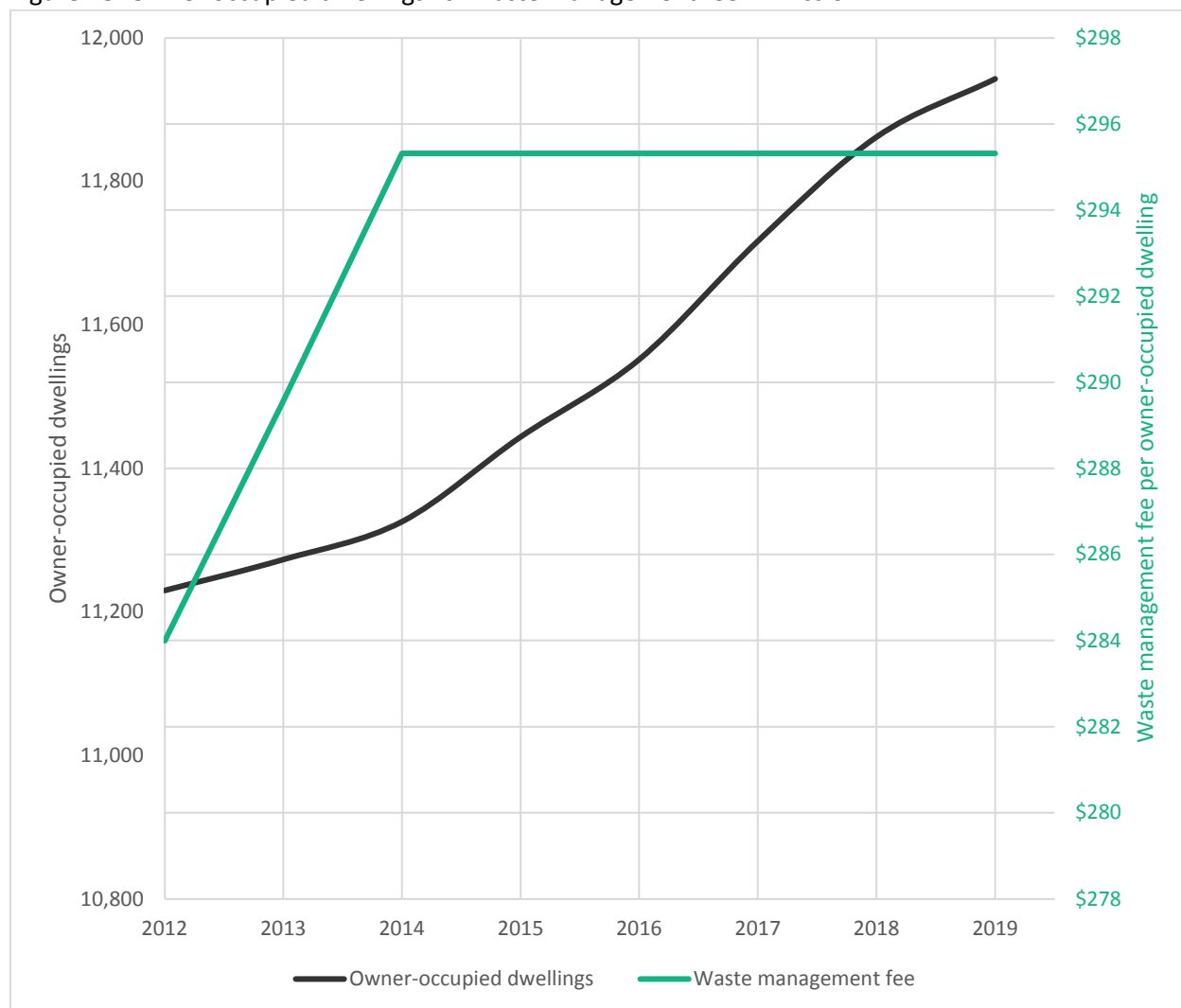


Table 12: Owner occupied dwellings vs. Waste management fee in Mission

Year	Owner-occupied dwellings	Waste management fee
2012	11,230	\$284.00
2013	11,273	\$289.56
2014	11,444	\$295.32
2015	11,552	\$295.32
2016	11,717	\$295.32
2017	11,862	\$295.32
2018	11,943	\$295.32
2019	12,087	\$295.32

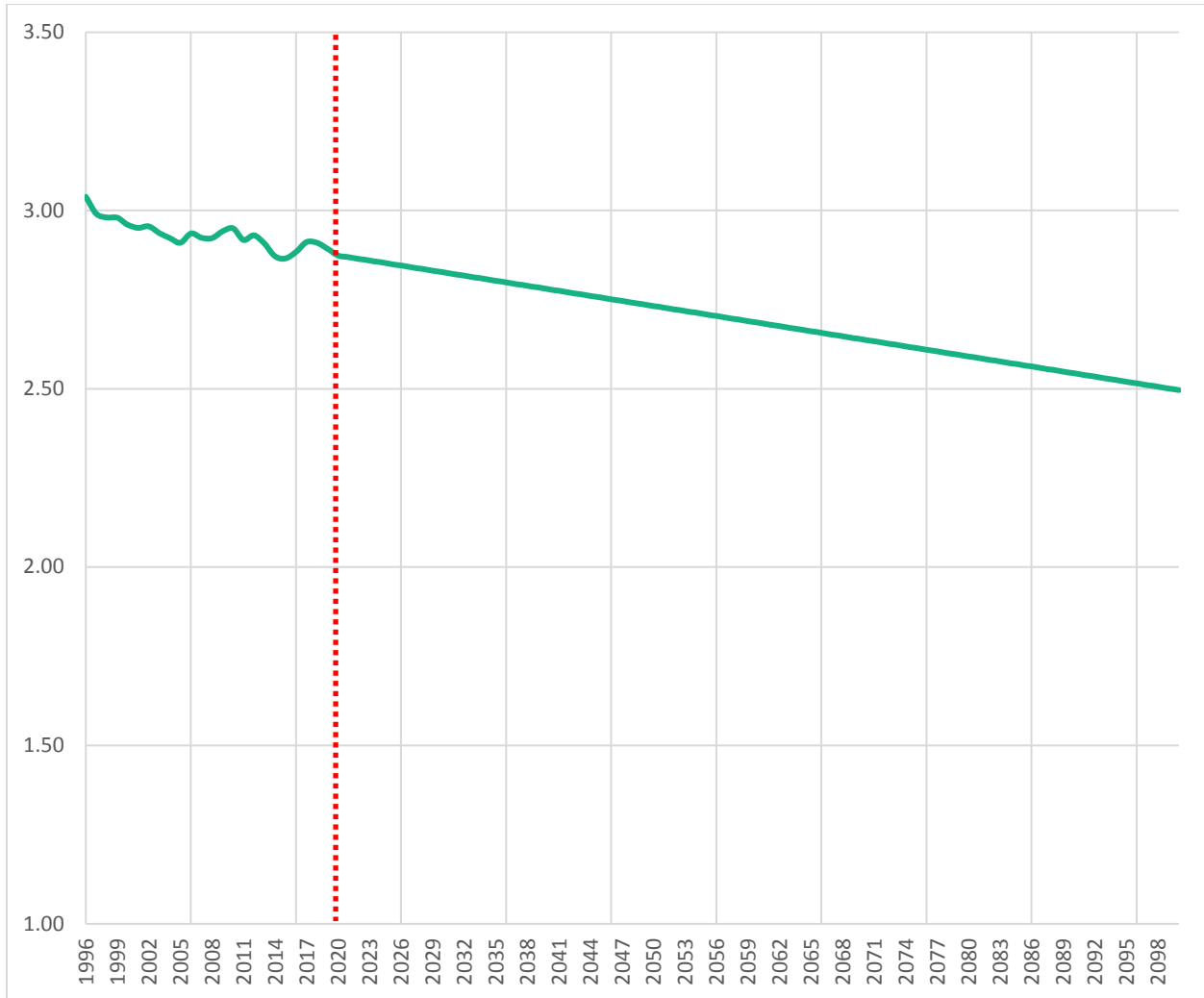
The waste management fee was \$284 per owner-occupied dwelling in 2012. It then increased to \$289.56 in 2013. From 2014 – 2019 it has remained constant at \$295.32.

A2 Property Value and Municipal Expense Projection Excluding Silverdale

A2.1 Residential Property Value

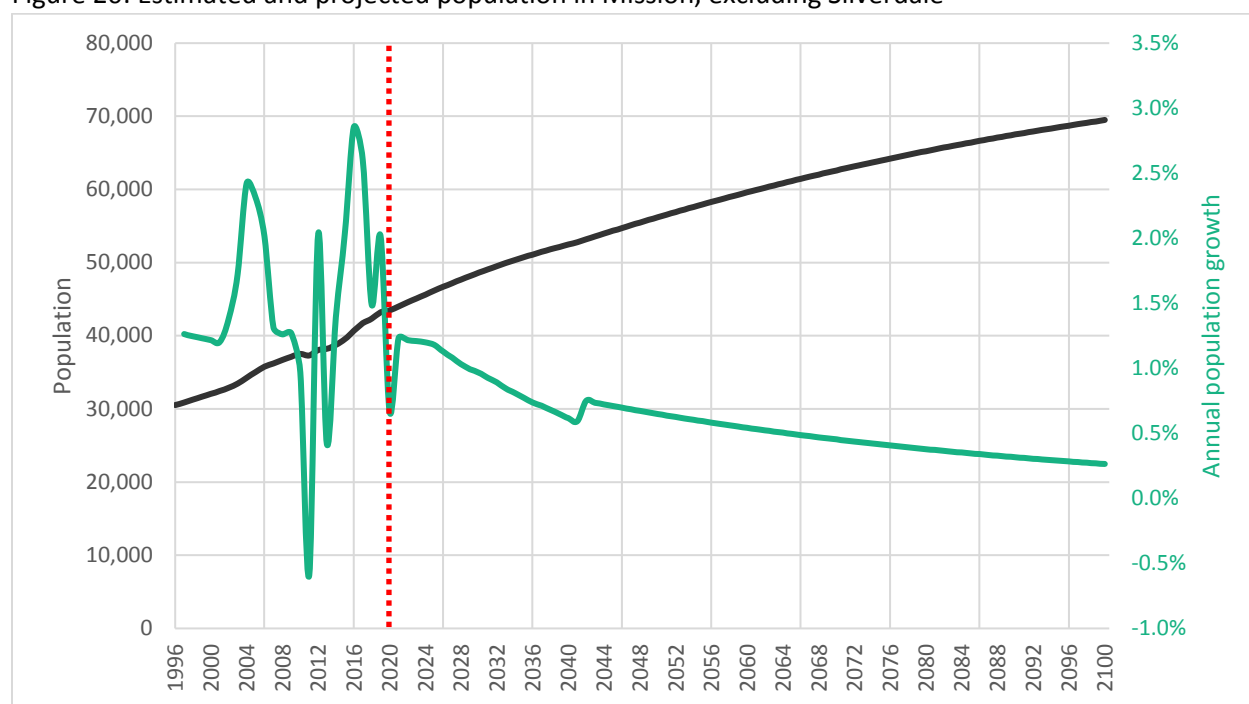
For the purposes of this analysis, GPRA assumes that population growth, property development, and property value escalation in Mission but outside of Silverdale will proceed identically whether or not development in Silverdale occurs. In reality there are likely to be many ways in which Silverdale's development impacts trends elsewhere in Mission, but these impacts are complex and unpredictable and are therefore ignored here for simplicity and clarity.

Figure 19: Estimated and projected population per dwelling in Mission, excluding Silverdale⁴¹



From 1996 to 2019, the population per dwelling in Mission decreased from 3.04 to 2.89. GPRA projects that this ratio will continue to decrease at the same rate for the remainder of the twenty-first century, reaching about 2.5 by 2100. This will largely be the result of densification in Mission and a greater share of multi-family dwellings.

⁴¹ Source: Statistics Canada and BC Statistics

Figure 20: Estimated and projected population in Mission, excluding Silverdale⁴²Table 13: Estimated and projected population in Mission, excluding Silverdale⁴²

Year	Population	Average annual population growth in previous 5 years
1996	30,519	
2001	32,446	1.2%
2006	35,769	2.0%
2011	37,302	0.8%
2016	40,668	1.7%
2021	44,026	1.6%
2026	46,701	1.2%
2031	49,085	1.0%
2036	51,111	0.8%
2041	52,795	0.7%
2046	54,733	0.7%
2051	56,567	0.7%
2056	58,298	0.6%
2061	59,927	0.6%
2066	61,457	0.5%
2071	62,890	0.5%
2076	64,229	0.4%
2081	65,479	0.4%
2086	66,643	0.4%
2091	67,726	0.3%
2096	68,731	0.3%
2100	69,482	0.3%

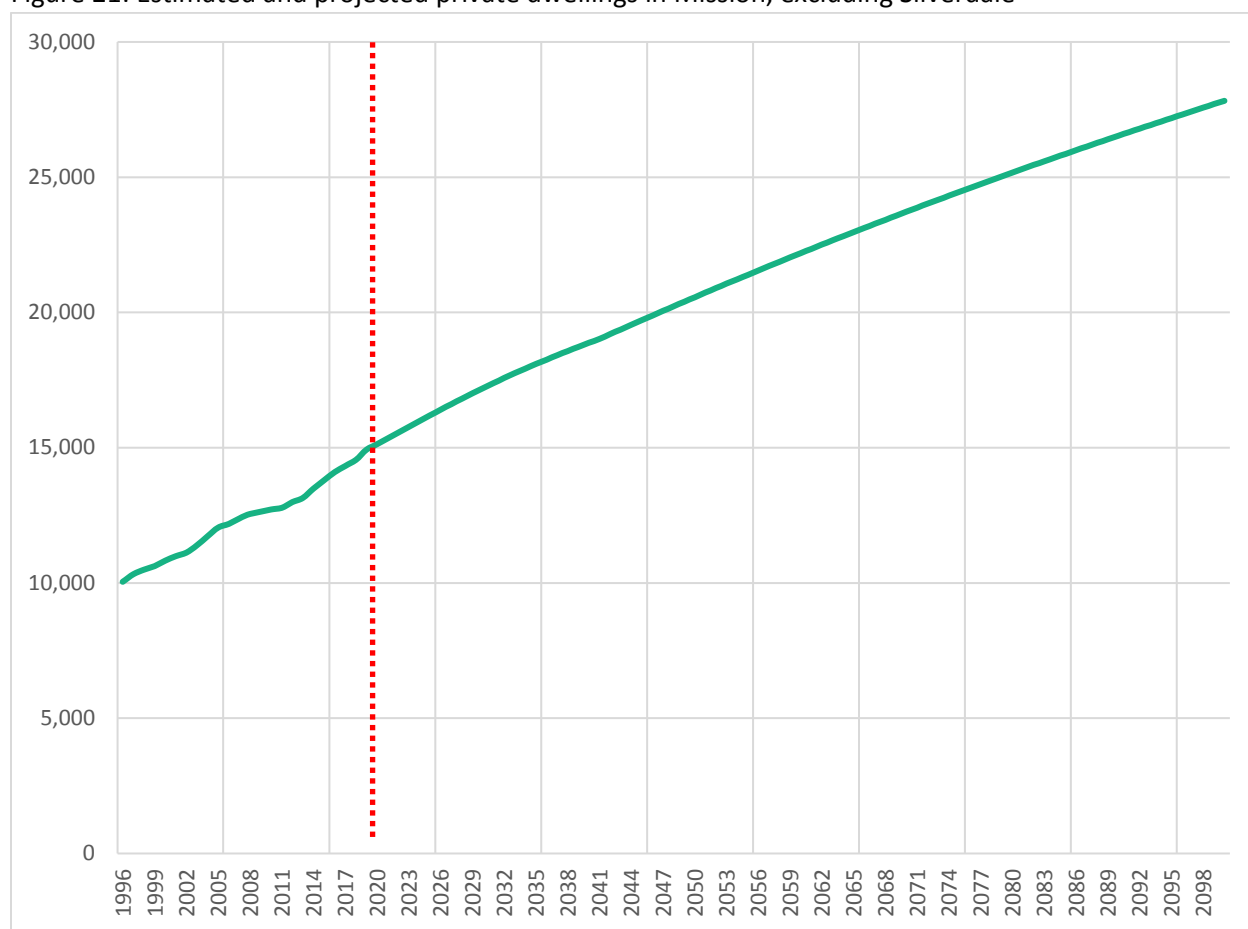
⁴² Source: Statistics Canada and BC Statistics

According to Statistics Canada and BC Statistics, from 1996 to 2019, Mission's population grew from about 31,000 to more than 43,000, achieving average annual growth of 1.5% although in some years the pace of growth was as high as 3% or as low as -0.5%.

BC Statistics forecasts that the Mission School District will grow from about 47,000 in 2019 to 55,000 in 2041. From 1996 to 2019, the District's share of total School District Population increased from 85% to 93%. GPRA assumes that the District's share of total School District Population will continue to increase to 96% in 2041. GPRA therefore infers that the District's population will reach almost 53,000 by 2041. Growth in Mission will gradually slow from about 1.6% per year at present to about 0.7% per year in 2041. From 2042 – 2100, GPRA assumes that population growth in Mission will continue to slow but not stop, and by the end of the century the population of the District excluding Silverdale will be about 69,000.

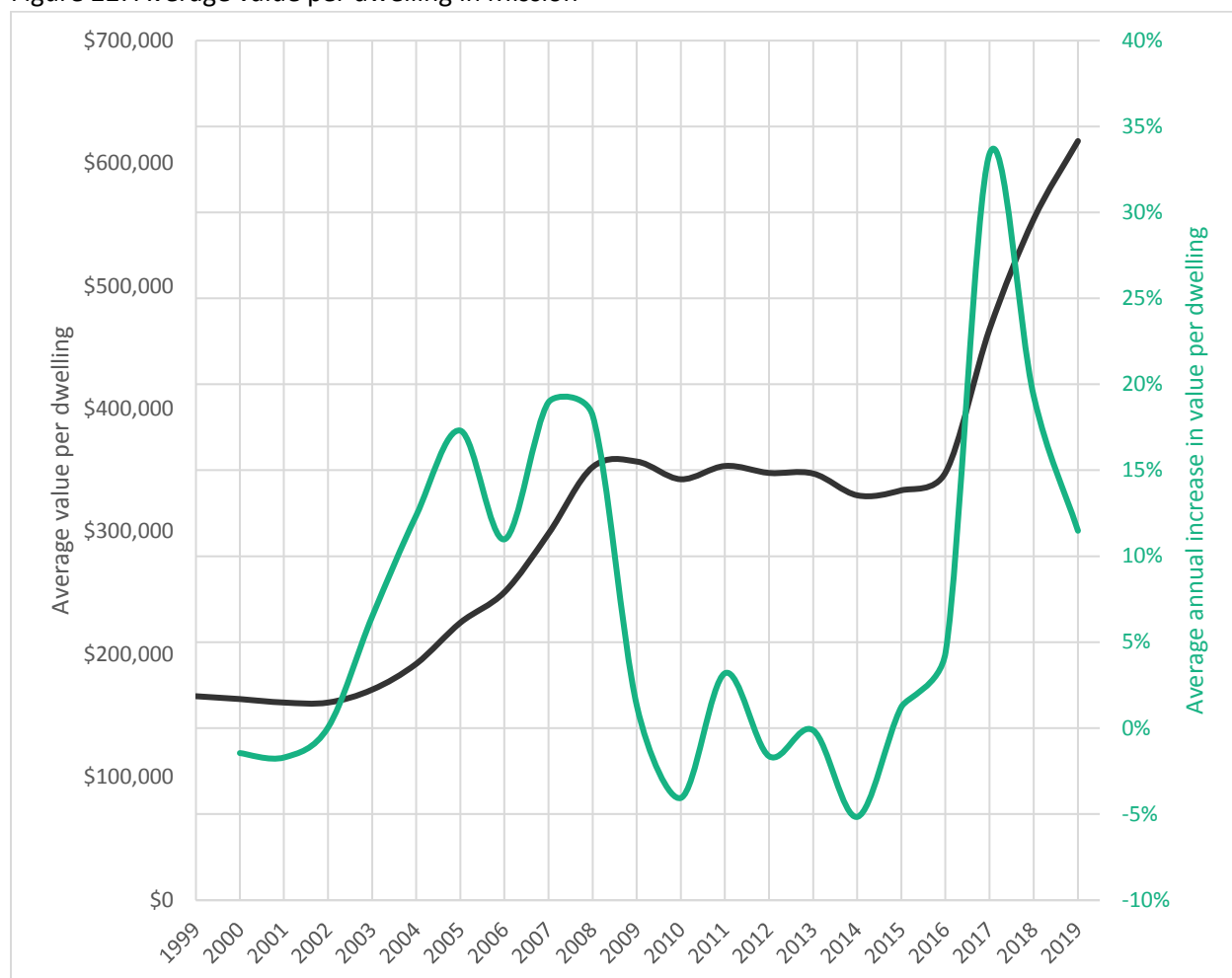
Combining the population projection presented in Figure 20 and Table 13 above with the projection of population per dwelling presented in Figure 19, pg. 37 produces the following projection of housing supply in Mission, excluding Silverdale.

Figure 21: Estimated and projected private dwellings in Mission, excluding Silverdale



The number of private dwellings in Mission increased from about 10,000 in 1996 to about 15,000 in 2019. GPRA forecasts that the number of private dwellings outside of Silverdale will continue to increase at a gradually slowing rate, reaching almost 28,000 by the end of the century.

Figure 22: Average value per dwelling in Mission



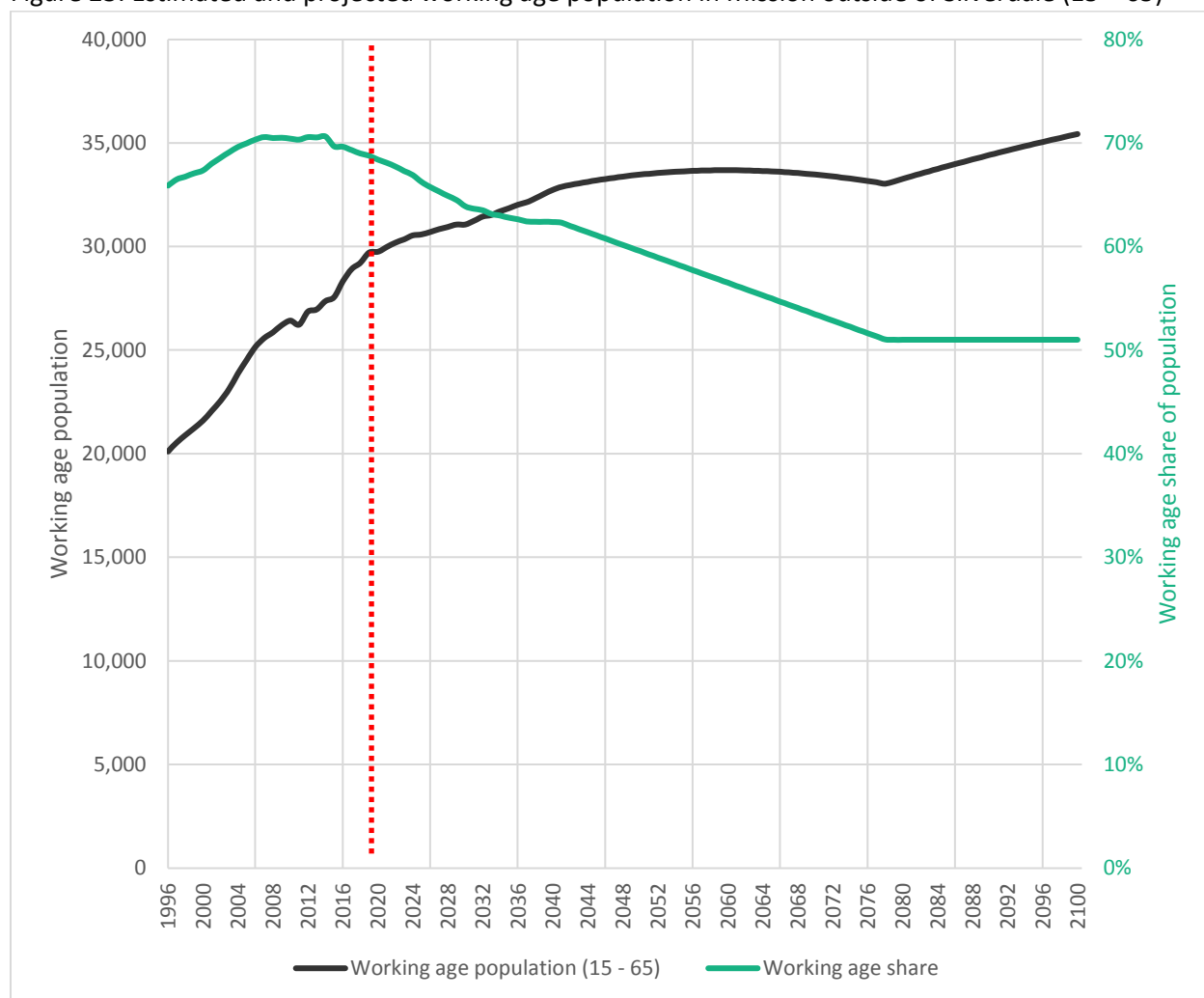
As indicated in Figure 22 above as well as Table 8, pg. 31, between 1999 and 2019 the value of Mission's average dwelling increased from about \$166,000 to about \$618,000, achieving an average annual increase of about 6.8%, although the pace of increase varied considerably. In the future, GPRA assumes that the value of the average property outside of Silverdale will escalate at a rate of 5.5% annually from 2020 to 2034 before slowing to 2% by 2041 and continuing at that rate for the remainder of the twenty-first century. This is the same residential escalation rate assumed in the Silverdale financial model.

Even this relatively conservative set of assumptions produces an average property value of \$5.6 million in 2100. This may seem outlandish but note that this includes inflation. Eighty years of inflation produces results that seem counterintuitive today; for example, consider that single family homes were often sold for \$10,000 - \$30,000 in Canada in the 1950s.

Between residential development and residential property value growth, the total value of all residential properties in Mission outside of Silverdale is expected to increase from \$9.2 billion in 2019 to \$157 billion in 2100, which is a factor of 17. Again, this extremely large number reflects mostly inflation because both the pace of development and the pace of value escalation assumed by GPRA are below the historically observed rates indicated above.

A2.2 Business and Industrial Property Value

Figure 23: Estimated and projected working age population in Mission outside of Silverdale (15 – 65)⁴³



In 1996, working age people (15 – 65) made up 66% of Mission’s population. Their share of the population increased slightly over the following decade to 71% by 2007 and since then has remained stable at 69% - 71%. BC Statistics forecasts that their share will decrease continuously as more young families and seniors elect to live in Mission, reaching 62% in 2041. GPRA projects that the working age population will continue to decrease in share from 2041 to 2077 at which time it will reach a stable share of 51% of the total population. This may seem extremely low, but by the late twenty-first century humanity may be in a state of population decline with relatively few young people. Mission’s working-age population rose from about 20,000 in 1996 to 30,000 in 2019 but future growth is expected to be slow, with only about 35,000 working-age residents in 2100, excluding Silverdale.

Mission’s employed population consisted of 65% - 69% of its working age population from 1996 – 2016, with an average of 67%. GPRA assumes this will remain true. As such, the employed population is about 20,000 at present and will increase to about 24,000 by 2100, excluding Silverdale.

⁴³ Source: Statistics Canada and BC Statistics

Figure 24: Total industry and business property value per employed resident in Mission

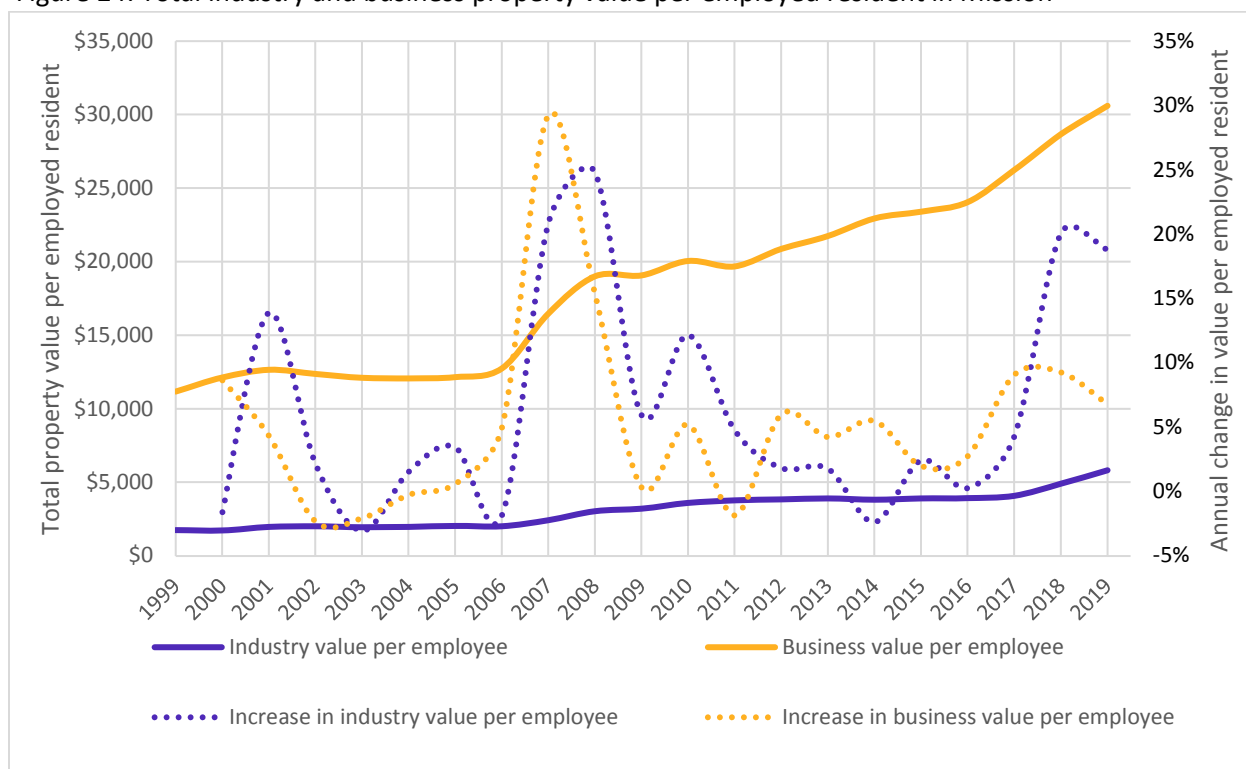


Table 14: Total industry property value per employed resident in Mission

Year	Industry value per employee		Business value per employee	
	Value	Increase in value	Value	Increase in value
1999	\$1,757		\$11,168	
2000	\$1,729	-2%	\$12,133	9%
2001	\$1,969	14%	\$12,660	4%
2002	\$2,011	2%	\$12,366	-2%
2003	\$1,950	-3%	\$12,108	-2%
2004	\$1,980	2%	\$12,077	0%
2005	\$2,048	3%	\$12,149	1%
2006	\$2,010	-2%	\$12,745	5%
2007	\$2,430	21%	\$16,475	29%
2008	\$3,033	25%	\$19,010	15%
2009	\$3,212	6%	\$19,068	0%
2010	\$3,603	12%	\$20,061	5%
2011	\$3,774	5%	\$19,689	-2%
2012	\$3,843	2%	\$20,871	6%
2013	\$3,911	2%	\$21,754	4%
2014	\$3,818	-2%	\$22,948	5%
2015	\$3,911	2%	\$23,406	2%
2016	\$3,921	0%	\$24,050	3%
2017	\$4,086	4%	\$26,227	9%
2018	\$4,906	20%	\$28,657	9%
2019	\$5,827	19%	\$30,602	7%

The total number of employed residents in Mission is not directly connected to business and industrial activity in Mission. For one thing, many of Mission's employed residents work outside of the District, just as many people who work within the District reside elsewhere. And of those who do work in Mission, some work from their homes. However, since we do not have access to employment data per se, GPRA has elected to forecast the total value of industrial and business property in Mission outside of Silverdale as a function of the area's employed population rather than a function of total population, thus associating these employment-related property categories more with local employment trends than with mere population trends.

From 1999 to 2019, the total value of industrial property in Mission per employed resident increased from \$1,757 to \$5,827, achieving average annual growth of about 6.5%. The pace of growth varied from above 20% in some years to just below 0% in others. During the same time period, the total value of business property in Mission per employed resident increased from \$11,000 to almost \$31,000, achieving average annual growth of about 5.2%, with growth often as rapid as 9% per year and even 29% in 2007 and often as low as -2%.

In the future, GPRA projects that total industrial property value per employed resident in Mission – excluding Silverdale – will escalate at a rate of 5.5% annually from 2020 to 2034 before slowing to 2% by 2041 and continuing at that rate for the remainder of the twenty-first century. This is the same escalation rate assumed for residential property values and is lower than the historically observed rate discussed above. Combining this escalation rate with the projected employed population growth discussed on pg. 38 – 39 will cause the total industrial property value in Mission to increase from \$115 million in 2019 to 1.25 billion in 2100, a factor of 10.9.

Similarly, GPRA projects that total business property value per employed resident in Mission – excluding Silverdale – will escalate at a rate of 5.2% annually (the historically observed rate) from 2020 to 2034 before slowing to 2% by 2041 and continuing at that rate for the remainder of the twenty-first century. Combining this escalation rate with the projected employed population growth discussed on pg. 41 will cause the total business property value in Mission outside of Silverdale to increase from \$605 million in 2019 to 6.29 billion in 2100, a factor of 10.4.

As with residential value increase, the growth of each of these categories of property value is largely a function of inflation.

A2.3 Other Categories of Property Value

Figure 25: Total recreational and non-profit property value per capita

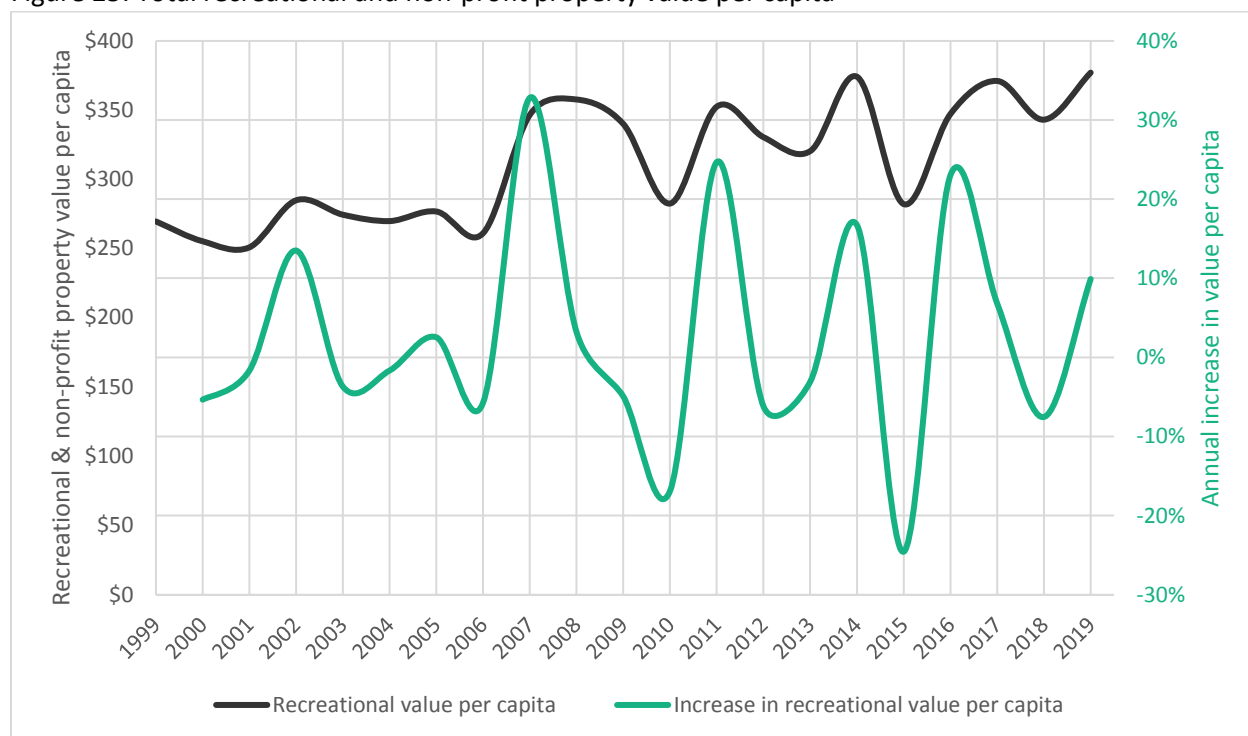


Table 15: Total recreational and non-profit property value per capita

Year	Total recreational & non-profit value per capita	Annual increase in value per capita
1999	\$270	
2000	\$255	-5%
2001	\$251	-2%
2002	\$285	14%
2003	\$274	-4%
2004	\$270	-2%
2005	\$277	3%
2006	\$261	-6%
2007	\$347	33%
2008	\$358	3%
2009	\$340	-5%
2010	\$283	-17%
2011	\$353	25%
2012	\$331	-6%
2013	\$320	-3%
2014	\$374	17%
2015	\$282	-25%
2016	\$347	23%
2017	\$371	7%
2018	\$343	-8%
2019	\$377	10%

The total value of recreational and non-profit property in Mission increased from \$270 per capita in 1999 to \$377 per capita in 2019, achieving average annual growth of 1.7% despite huge year-to-year variation in value (as high as 33% and as low as -25%). GPRA assumes that this property category will continue to grow in value per capita at this rate, which will cause its total value to increase from \$16 million in 2019 to \$102 million in 2100, a factor of 6.3.

Table 7, pg. 30 shows that from 1999 to 2019, the total value of utilities in Mission decreased from \$7.6 million to \$6.9 million. However, the average year of growth was 0.11%. GPRA assumes that utilities outside of Silverdale will continue to increase in value at this rate, from \$6.9 million in 2019 to \$7.6 million in 2100, a factor of 1.1.

Table 7, pg. 30 also shows that from 1999 to 2019, the total value of farms in Mission remained basically unchanged at \$3.1 million. However, the average year of growth was 2%. GPRA assumes that Mission's farms will continue to increase in value at this rate, from \$3.1 million in 2019 to \$15.8 million in 2100, a factor of 5.2.

A2.4 Municipal Expense Projection Excluding Silverdale

Figure 15, pg. 32, and Table 9, pg. 33 show that:

- From 1999 to 2019, the 96% of municipal expenses in the general, police, and drainage categories covered by property taxes increased from \$399 per capita to \$815 per capita, achieving average annual growth of 3.6%
- From 2010 to 2019, the 96% of municipal expenses in the library category covered by property taxes increased from \$29 per capita to \$34 per capita, achieving average annual growth of 1.5%
- From 2012 to 2019, the 68% of municipal expenses in the waste management category covered by property taxes decreased from \$84 per capita to \$82 per capita, achieving average annual growth of -0.4%.

GPRA assumes that these escalation rates will continue until 2037 at which time the larger general, police, and drainage rate will decrease to 2% per year by 2041. Combining these escalation projections with the population forecast presented in Figure 20 & Table 13, pg. 38, and adding in the cost components covered by miscellaneous revenue items (4%, 4%, and 32% of costs in the three categories respectively) produces the following municipal expense projection excluding Silverdale:

- General, police, and drainage expenses are projected to increase from \$36.6 million in 2019 to \$401 million in 2100, a factor of 11
- Library expenses are projected to increase from \$1.5 million in 2019 to \$8.0 million in 2100, a factor of 5.3
- Waste management expenses are projected to increase from \$3.5 million in 2019 to \$4.2 million in 2100, a factor of 1.2.

A3 Property Value and Municipal Expenses in Silverdale

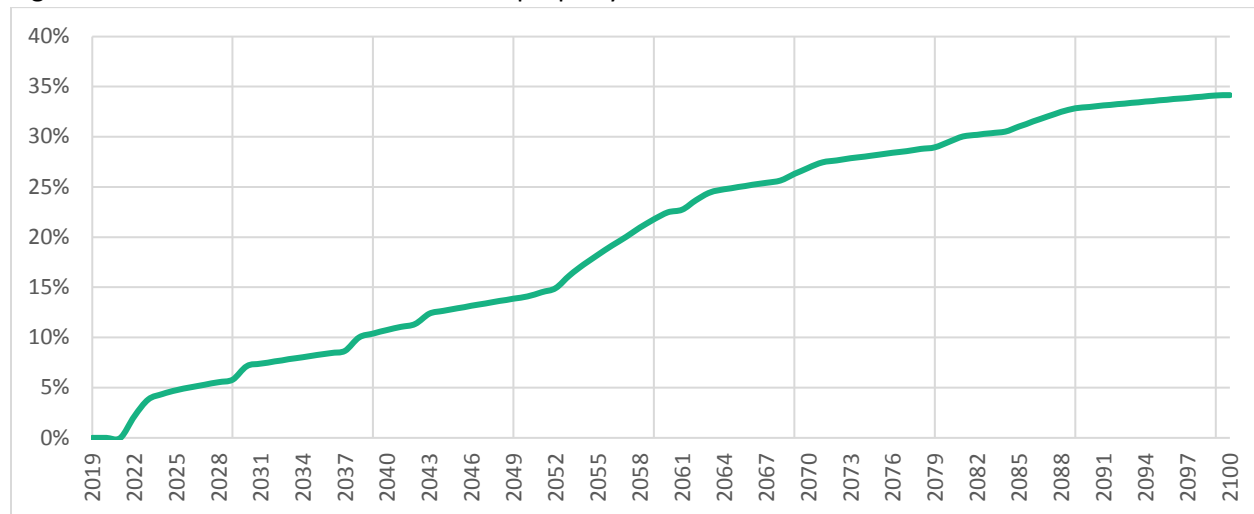
A3.1 Property Value in Silverdale

The financial model identifies the value of all new development in Silverdale, which falls into two categories: residential properties and retail properties. In addition to the model assumptions presented in the previous report, GPRA adds the following assumptions in order to produce a projection of total property value over time:

- Whereas new residential products escalate in value at a rate of 5.5% per year from 2020 to 2034 and then 2% from 2041 onward, existing residences in Silverdale will escalate in value at a rate of only 5% per year from 2020 to 2034. This shows the impact of aging on property value and the growing difference in price between new and existing products
- To estimate the value of commercial properties, GPRA assumes an annual capitalization rate⁴⁴ of 5% in 2019 increasing over time to 10% in 2100. 5% is approximately today's capitalization rate for suburban retail properties, but 10% is closer to historic rates
- Silverdale will also contain utilities with the same property value per capita observed elsewhere in Mission in a given year (see Section A2.4, pg. 45).

Under these assumptions and the development pace detailed in the previous report, total residential value in Silverdale will rise to \$85.6 billion by 2100, total commercial value will rise to \$635 million by 2100, and total utilities value will equal \$4.2 million by 2100. Silverdale's share of Mission's total property value will grow over time to about 34% as shown below:

Figure 26: Silverdale share of total District property value



⁴⁴ The capitalization rate is the share of total value that one time period of net revenue represents. For example, an annual capitalization rate of 5% means that one year of net revenue represents 5% of a property's total value. If a property produced \$1 million of net revenue per year and was worth \$20 million in total, it would have an annual capitalization rate of 5%. Capitalization rate is a measure of investor appetite: lower capitalization rates mean that investors are willing to pay more for less revenue.

A3.2 Municipal Expenses in Silverdale

Municipal expenses in Silverdale will increase as new infrastructure and amenities are introduced, necessitating ongoing operating and maintenance costs. Some expenses will increase gradually with development, whereas others will appear suddenly as new facilities become operational.

To forecast the population of Silverdale each year, GPRA assumes 2.9 residents per single family home, 2.5 residents per townhome, and 1.7 residents per apartment, as instructed by District staff. The resulting population projection presented below shows Silverdale reaching almost 39,000 in population by 2100.

Figure 27: Silverdale population over time

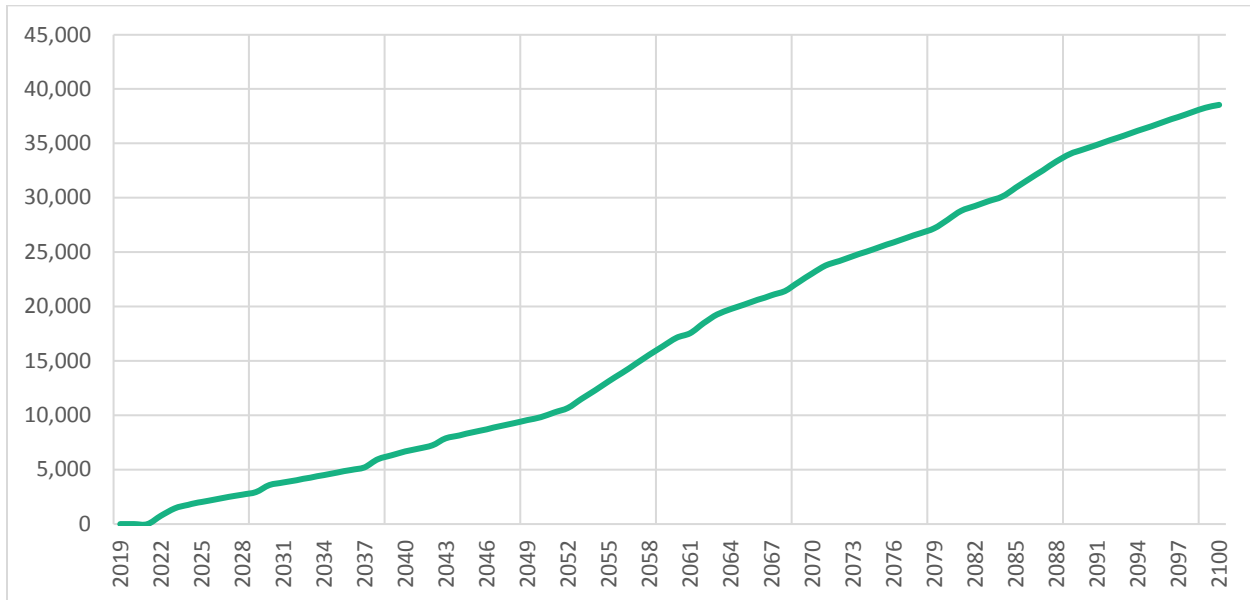


Table 16: Silverdale population over time

Year	Population
2025	2,057
2030	3,592
2035	4,755
2040	6,686
2045	8,456
2050	9,846
2055	13,129
2060	17,134
2065	20,199
2070	23,058
2075	25,490
2080	28,005
2085	30,924
2090	34,458
2095	36,593
2100	38,563

According to data received by GPRA from the District, municipal costs in Silverdale will be as follows:

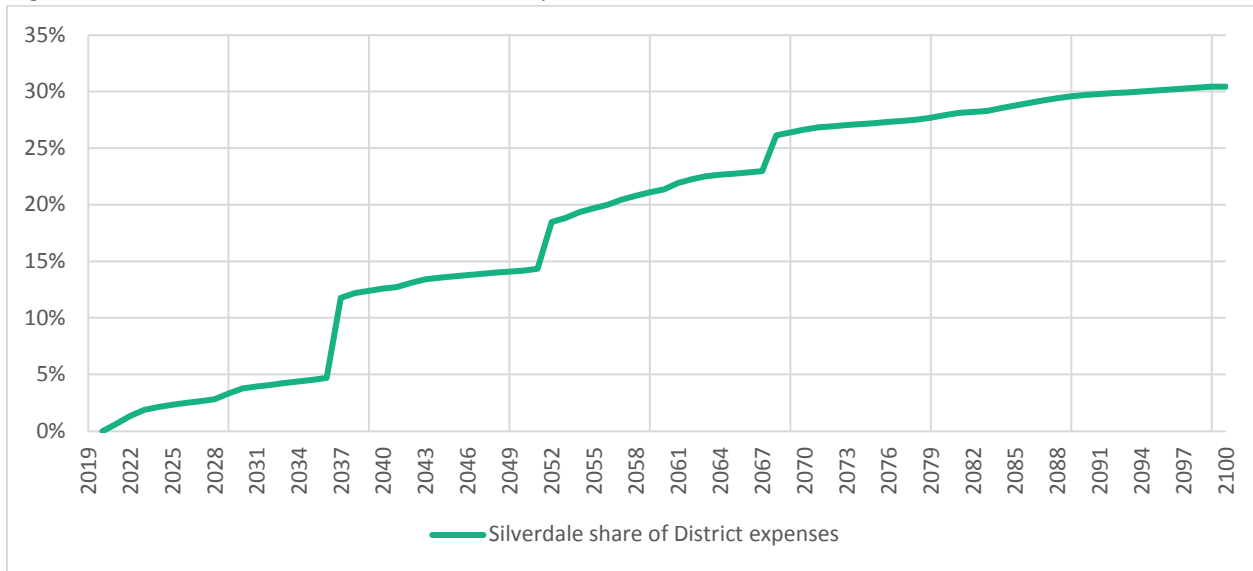
Table 17: Annual municipal expenses in Silverdale (2020)

Category	Cost	Per	Comment (Year Built)
General government	\$371.14	Capita	
Fire hall	\$3,892,795	Fire hall	One, located in Central Neighbourhood South (2036)
Recreational complex	\$2,965,746	Recreational complex	Two, located in West Neighbourhood South (2051) and Central Neighbourhood North (2067)
Neighbourhood parks	\$10,075	Acre	
Community parks	\$1,452	Acre	Three, located in Central Neighbourhood South (2036 & 2041) and West Neighbourhood South (2089)
District parks	\$3,810	Acre	Two, located in Central Neighbourhood South (2041) and Central Neighbourhood North (2067)
Sports park	\$5,539	Acre	One, located in West Neighbourhood South (2051)
Roads	\$1,091.40	Acre of residential development	Inferred by GPRA from existing development in Mission
Library	\$130,418	Library	One, located in Central Neighbourhood South (2041)
Public works centre	\$239,102	Public works centre	One, located in East Neighbourhood South (2060)
RCMP building	\$184,640	RCMP building	One, located in Central Neighbourhood South (2036)
Drainage	\$10.44	Metre of storm sewer	
Waste management	\$90.10	Capita	

GPRA assumes that these rates will escalate in tandem with the rates identified in Section A2.4, pg. 45. GPRA also assumes that brand new infrastructure will require 5% less expense in the first year of operation, 4.5% less in the second year, 4% less in the third, etc., until by the eleventh year each infrastructure item is generating expenses fully. This reflects the fact that new infrastructure will require less upkeep at first.

Under these assumptions, Silverdale's expenses in the general, police, and drainage categories will increase from zero to \$183 million in 2100, in the library category from zero to \$422,000 in 2100, and in the waste management category from zero to \$2.6 million in 2100. Silverdale's share of Mission's total municipal expenses will grow over time to about 30% as shown below:

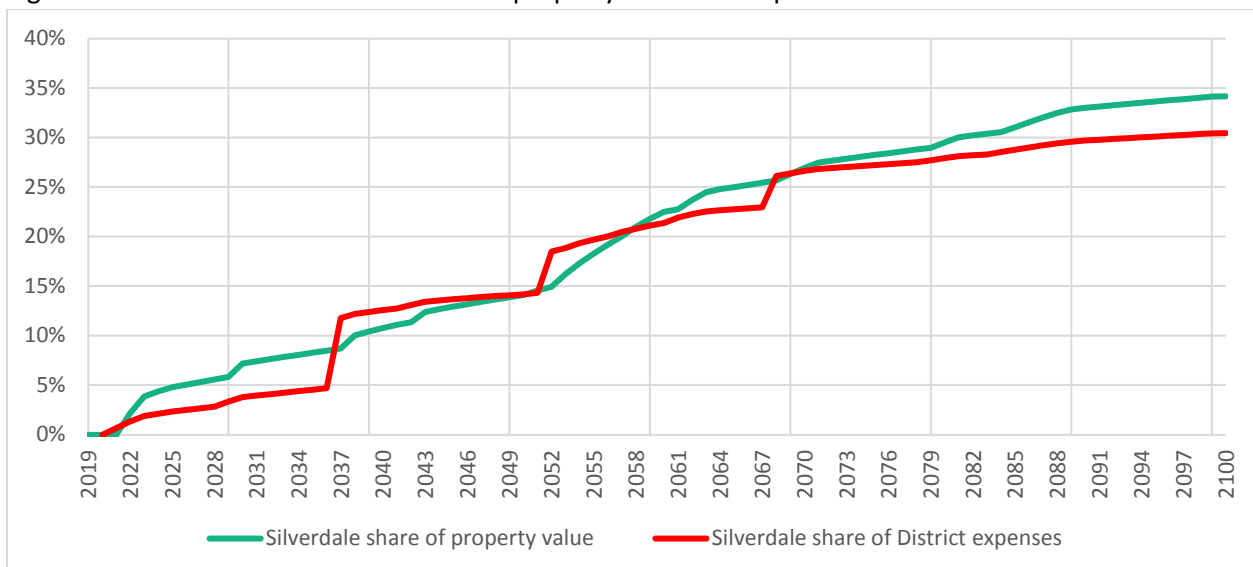
Figure 28: Silverdale share of total District expenses



Notice that annual costs increase only gradually most years, but increase suddenly after new facilities are developed, most notably in 2036 (the emergency facilities in Central Neighbourhood South), 2051 (recreational complex and sports park in West Neighbourhood South), and 2067 (recreational complex in Central Neighbourhood North).

Combining Figure 26, pg. 46 with Figure 28 above gives a rough sense of when Silverdale's additional property value will outweigh its additional costs and when the reverse will be true; generally Silverdale's impact will be most negative immediately after the development of a project phase due to operating costs on new facilities and most positive between phases as ongoing development expands the tax base. Property value from Silverdale outweighs costs in Silverdale from 2022 – 2036, in 2051, from 2058 – 2067, and from 2070 onward. Costs from Silverdale outweigh property values from Silverdale in 2021, from 2037 – 2050, from 2052 – 2057, and from 2068 – 2069. This is visualized in Figure 29.

Figure 29: Silverdale share of total District property value and expenses



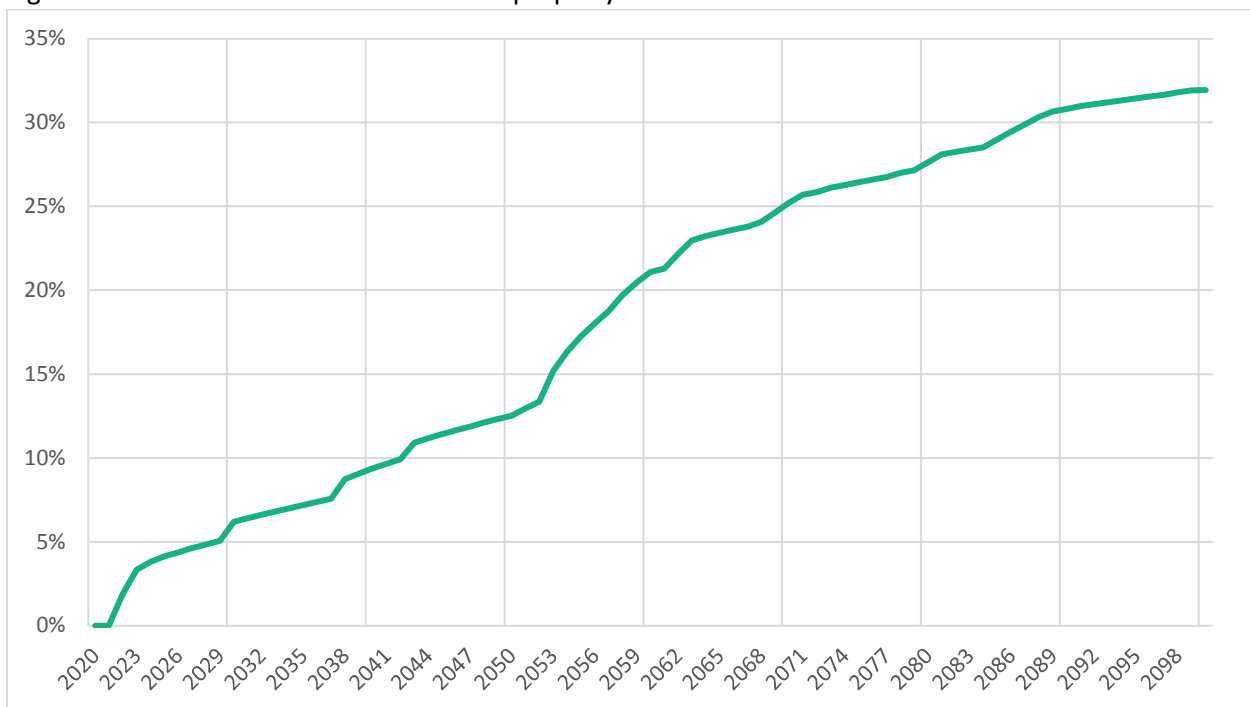
A4 Impacts of Silverdale Development

Sections 4.2 and 4.3 above define and describe projections of all District property value and municipal expenses from 2019 to 2100. These can be used to determine the tax rates over time. GPRA assumes that the ratio between tax rates for different property types will remain the same as in 2019, namely (with residential as the benchmark):

- Residential: 1.0
- Utilities: 13.4
- Industry: 3.2
- Business: 4.2
- Recreational & non-profit: 3.1
- Farm: 7.5

Note also that tax rate comparisons *within* scenarios are irrelevant to this analysis; only tax rate comparisons *between* scenarios matter to this discussion. Therefore, although GPRA has projected the tax rate over time in both scenarios (with and without development in Silverdale), we will only present data that compares the two scenarios rather than exploring future tax rate trends per se.

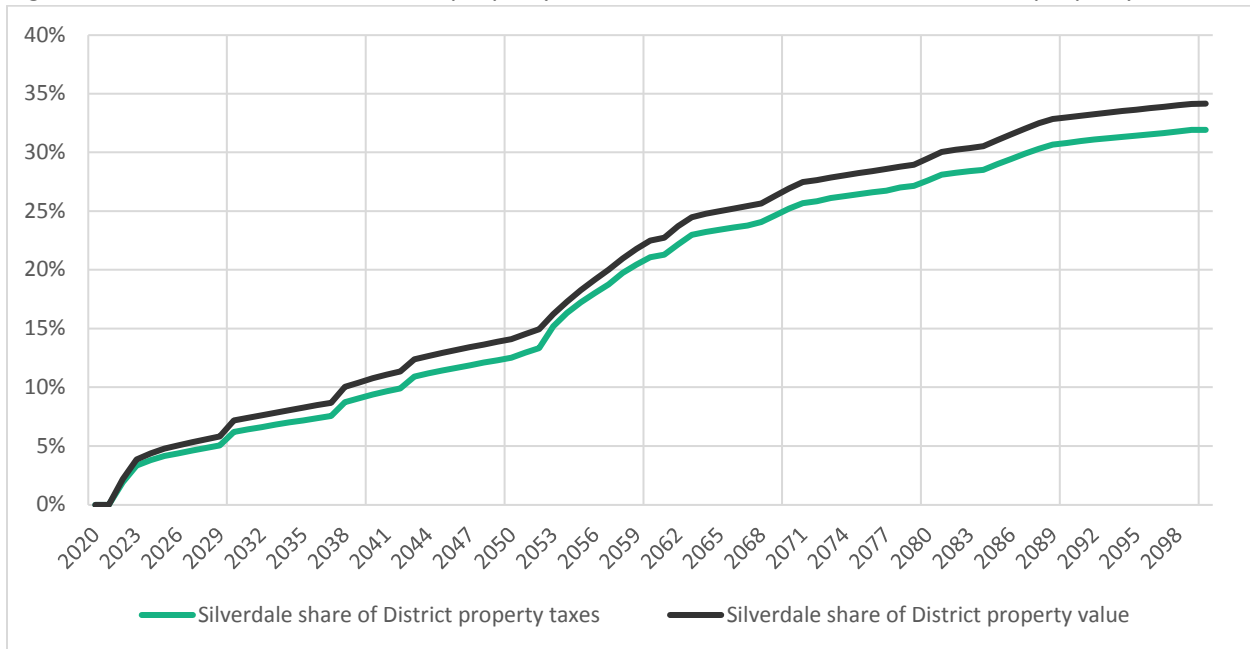
Figure 30: Silverdale share of total District property taxes over time⁴⁵



Silverdale's share of the District's overall tax revenue is projected to increase gradually throughout the remainder of the twenty-first century from 0% at present to about 32% in 2100. Note that this share is generally lower than Silverdale's share of the District's total property value (Figure 26, pg. 46), the latter of which reaches about 34%. The two are compared below.

⁴⁵ Note that this excludes water and waste because GPRA lacks sufficient data to make projections in these areas.

Figure 31: Silverdale share of District property value versus Silverdale share of District property taxes



The reason that property taxes from Silverdale will make up a smaller share of the District's total than property *values* in Silverdale is that a greater portion of Silverdale is expected to be residential than in the District as a whole. Because residential properties pay the lowest property tax rate, this results in generally lower taxes in Silverdale than in the rest of Mission.

Comparing Silverdale's share of total municipal expenses with its share of total municipal taxes over time indicates when and to what extent Silverdale will have a positive or negative impact on municipal finances and therefore the overall tax rate. This is presented below.

Figure 11: Silverdale share of total district property taxes and expenses over time

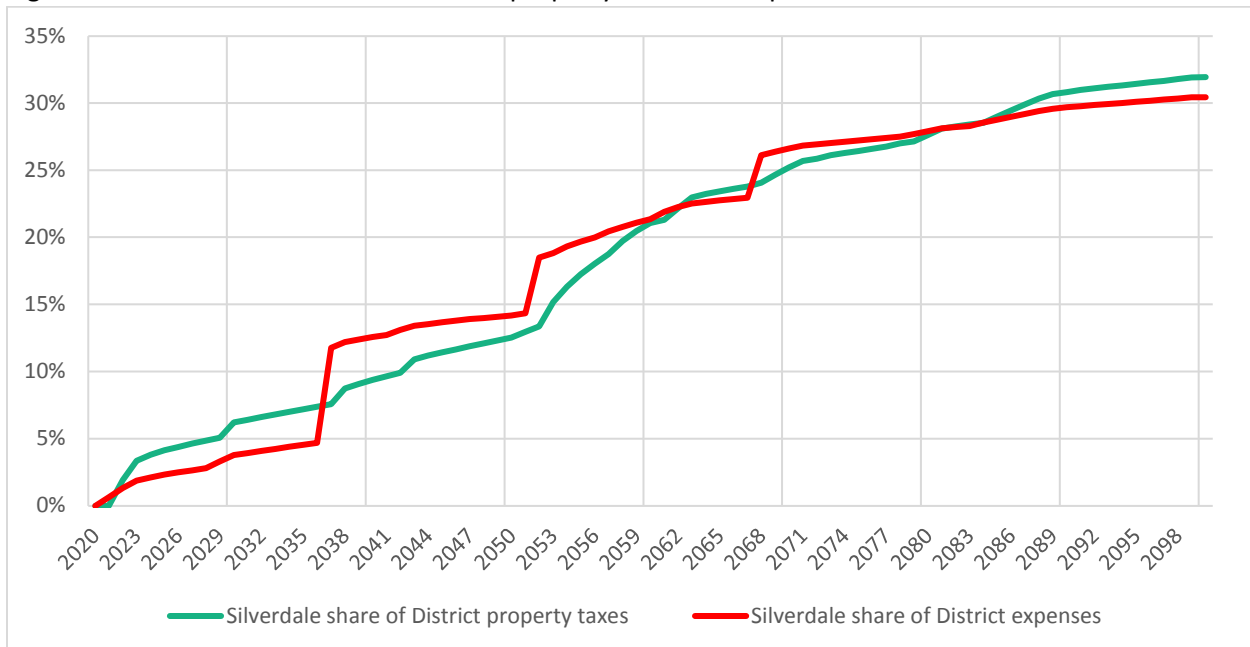
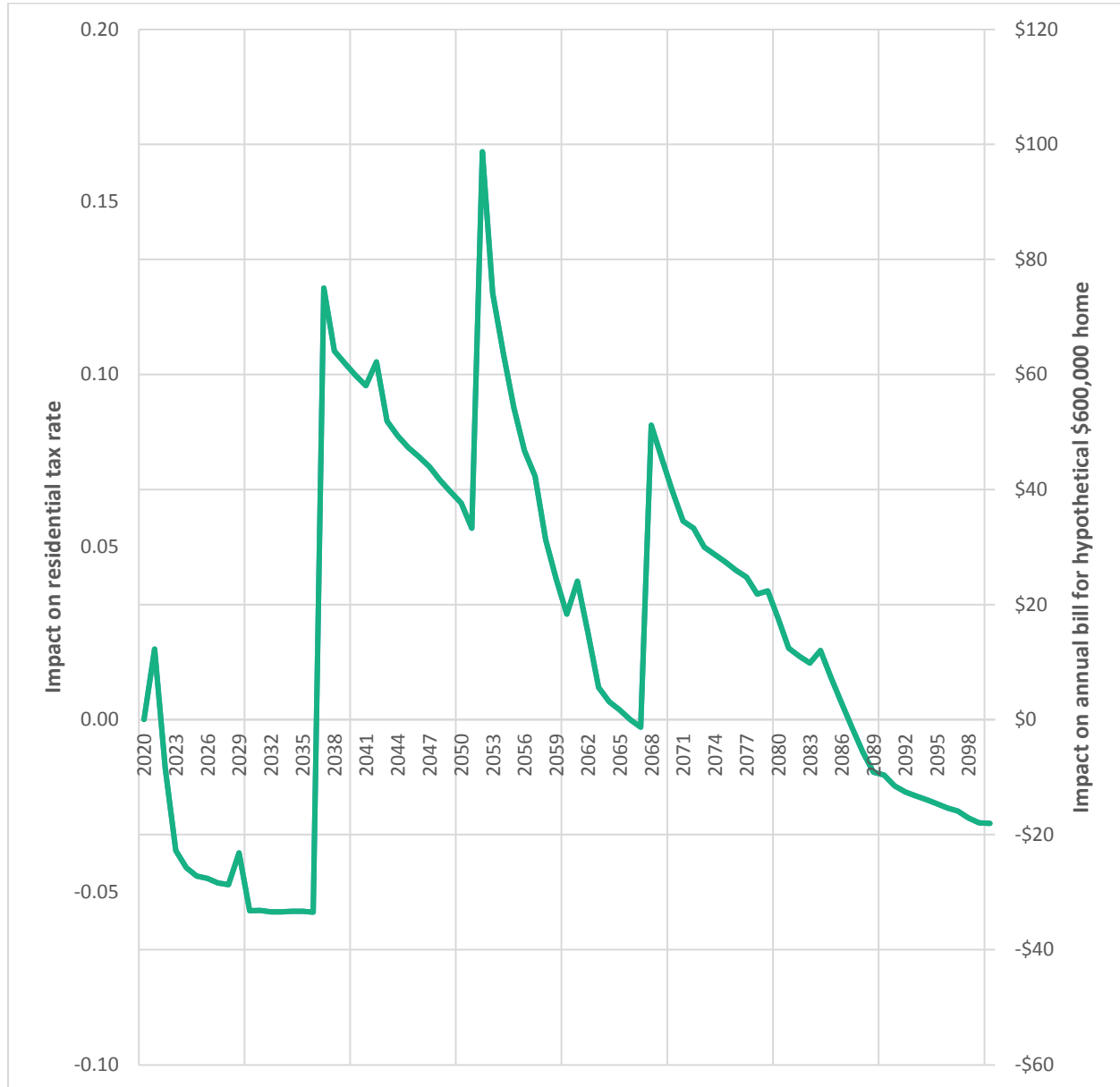


Figure 11 shows that the development of Silverdale is expected to have a negative impact in 2021, from 2037 – 2062, and from 2068 – 2080. And it is expected to have a positive impact from 2022 – 2036, 2063 – 2067, and from 2081 onward.

The property tax rate must be adjusted to ensure that tax revenue covers expenses. The development of Silverdale will therefore lead to an increased tax rate in years when its share of expenses exceeds its share of tax revenue; and to a decreased tax rate in years when the reverse is true. The impact of Silverdale on Mission's property tax rate over time is indicated below.

Figure 12: Impact of Silverdale on Mission's residential property tax rate over time (%)⁴⁶



⁴⁶ Includes taxes in the general, police, drainage, and library categories. Excludes waste management because this is charged as a flat rate rather than a mill rate.

From 2023 – 2036, the development of Silverdale has a generally positive impact and is expected to decrease Mission’s residential property tax rate by about 0.05‰, or about \$28 for a \$600,000 home. Then from 2037 – 2086 Silverdale has a generally negative impact, causing an increase in Mission’s property tax rate by an average of 0.06‰, or about \$35 for a \$600,000 home. Finally, from 2087 – 2100, Silverdale will have a positive impact and is expected to decrease Mission’s property tax rate by an average of 0.02‰, or about \$13 on a \$600,000 home. Within these overall trends there are short-term spikes and fluctuations, mostly due to the introduction of new municipal facilities.

The fluctuations in Figure 12 above indicate years when Silverdale’s impact on the property tax rate are more positive or more negative. It is possible to smooth these fluctuations by imagining that the District will set aside funds in years when Silverdale would otherwise decrease the tax rate and then use these funds in years when Silverdale would increase the tax rate (paying or receiving 2% interest on the balance in a given year). Doing this still produces a shortfall over the 80-year period analyzed. However, by the same token it is also possible to measure how much higher the property tax rate would have to be to eliminate this shortfall, thereby reducing the difference between the two scenarios to a single figure: the average difference in tax rates such that the two scenarios “break even” by year 2100.⁴⁷

This amount is a tax rate increase of about 0.02‰ for residential properties and proportional increases for other property types, which amounts to about \$12.28 per year for a hypothetical \$600,000 home. This is the amount that Mission’s property taxes would need to be increased so that increased revenues from Silverdale offset increased expenses from Silverdale between now and 2100 and may be viewed as the “average annual tax increase from Silverdale”.

Note as indicated in Figure 29, pg. 49 that property values in Silverdale generally keep pace with municipal expenses in Silverdale. The reason Silverdale’s development will tend to cause an increase in tax rates in Mission is that compared to the rest of Mission, it contains a larger share of residential property which pays a lower tax rate.

At build-out, based on the draft land use densities, it is expected that taxation will cover operational and maintenance costs.

⁴⁷ For Mission to literally take this approach would require outside funding such as District debt during the second half of the twenty-first century. GPRA knows this is not Mission’s preferred approach, so a variable tax rate over time as shown in Figure 12 is more realistic. However, District staff requested the calculation of a single number that reflects that average increase in property tax from Silverdale, and this approach is the clearest and simplest approach to estimating that number.