

HOME BUYER SAVINGS STRATEGY OPTIMIZER

User Guide

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v.14 | Canadian First-Home Savings Strategy Tool



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Introduction

The Home Buyer Savings Strategy Optimizer addresses a question that sits at the intersection of tax planning and mortgage planning, and that most home buyers are not equipped to answer on their own: given a specific income, existing account balances, available contribution room, and a target purchase horizon, what is the most effective way to allocate annual savings across the First Home Savings Account (FHSA), the Registered Retirement Savings Plan under the Home Buyers' Plan (RRSP/HBP), and the Tax-Free Savings Account (TFSA) to arrive at the largest possible down payment while minimizing unnecessary tax burden and post-purchase repayment obligations?

The answer depends on variables that interact in non-obvious ways. The FHSA provides both a tax deduction on contributions and tax-free growth and withdrawal for qualifying first-home purchases — it is in most circumstances the highest-priority account for first-time buyers. The RRSP/HBP provides a tax deduction today but creates a post-purchase repayment obligation spread over fifteen years; missed repayments are added to taxable income. The TFSA provides no upfront deduction but grows and is withdrawn tax-free without any repayment requirement. The optimal balance across these three instruments depends on the buyer's current marginal tax rate, the direction of their income growth, the amount of available contribution room in each account type, the number of years to purchase, and whether the goal is maximum down payment, maximum post-purchase financial flexibility, or minimum repayment burden.

The optimizer evaluates eight distinct contribution strategies across the planning horizon, scores each strategy on a composite framework that includes projected down payment size, tax efficiency, liquidity and flexibility, future HBP repayment burden, contribution timing quality, and cross-buyer optimization, and presents the highest-scoring strategy together with a ranked comparison of all alternatives. It supports both single-buyer and two-buyer (household) scenarios, applies the correct Canadian federal and provincial tax rates for all provinces and territories, models year-by-year FHSA carry-forward rules, RRSP room accrual from prior-year income, and TFSA room growth, and allows the user to choose between three optimization objectives. The tool runs entirely in the browser with no data transmission.

The Need This Optimizer Addresses

Canadian first-time home buyers have access to three powerful registered savings programs, but the programs interact with each other and with the tax system in ways that are genuinely complex. The FHSA was introduced in 2023 and most buyers do not yet have a full understanding of how its carry-forward rules, lifetime contribution limit, and interaction with the HBP should influence their annual savings allocation. The optimal answer is different for a buyer with a \$70,000 income saving for three years than for a buyer with a \$130,000 income saving for seven years — and it is different again for a two-buyer household where one buyer earns materially more than the other.

Most available guidance defaults to a simple hierarchy: maximize FHSA first, then HBP if needed, then TFSA. This is often reasonable advice, but it ignores several important dimensions. A buyer in a low tax bracket today who expects significant income growth may be better served by deferring RRSP contributions — taking the deduction at a higher future marginal rate — than by contributing to the RRSP now for the HBP. A buyer who expects their cash flow to be constrained after purchase may be better served by using less of the HBP, even at a modest cost to the projected down payment, in order to reduce the annual repayment

obligation. A two-buyer household can improve their combined after-tax outcome by concentrating deductible contributions in the higher-income earner's accounts. These dimensions require a model, not a rule of thumb.

The optimizer provides that model. It applies actual current-year federal and provincial tax rates, enforces contribution room constraints year by year, accounts for the compounding growth of all account balances, models the reinvestment of tax refunds when elected, and scores strategies against the user's explicit optimization objective. The output is not a generic recommendation but a projection specific to the inputs provided.

Who Uses This Optimizer and How

The optimizer is designed for three primary audiences, each of whom approaches it from a different angle and uses its outputs for a different purpose.

Mortgage Professionals

A mortgage agent or broker working with first-time home buyers uses the optimizer to provide quantitative, personalized savings strategy guidance that complements the mortgage qualification conversation. Before a client is ready to purchase, the most valuable thing an advisor can do is help them maximize the down payment they will arrive with and ensure their post-purchase financial position is as strong as possible. The optimizer makes that guidance concrete and defensible: rather than advising a client generically to "maximize their FHSA," the advisor can show the client a year-by-year projection of exactly how much each strategy produces, what the tax savings will be each year, and what the annual HBP repayment obligation will look like after purchase.

For two-buyer households, the optimizer's cross-buyer optimization scoring identifies whether contributions are being allocated to the higher-income earner's deductible accounts — where the tax benefit per dollar contributed is greatest — or whether the allocation is suboptimal from a household tax efficiency standpoint. This is a dimension of the conversation that most buyers have not considered and that the optimizer makes visible.

First-Time Home Buyers

A prospective home buyer who is actively saving for a first purchase uses the optimizer to understand which combination of account contributions will produce the best outcome given their specific situation. The three optimization modes — Max Down Payment, Max Flexibility, and Min HBP Repayment Burden — allow the buyer to explicitly identify their priority and receive a recommendation calibrated to that priority, rather than receiving a one-size-fits-all output.

The Year-by-Year Breakdown table is particularly valuable for a self-directed buyer. It shows the exact contribution allocation, account balance growth, and tax savings for each year of the projection under the recommended strategy, which allows the buyer to implement the plan year by year with confidence that each year's contributions are aligned with the overall strategy.

Financial Planners and Investment Advisors

A financial planner incorporating first-home savings into a broader wealth plan uses the optimizer to identify the account allocation that best integrates with the client's overall tax situation. The Projected Tax Savings figure and the year-by-year tax savings column quantify

the value of the deductible contributions, which can be compared against other tax planning opportunities. The Strategy Comparison table shows all eight evaluated strategies side by side, which allows the planner to make an informed recommendation that considers not just the projected down payment but the trade-offs between strategies in terms of flexibility, burden, and tax efficiency.

Use Cases

The following use cases illustrate the range of planning tasks the optimizer supports. Each is explored in detail in the Scenarios section of this guide.

- Identifying the optimal annual contribution split across FHSA, RRSP/HBP, and TFSA for a single buyer with a three-to-five year purchase horizon, prioritizing the largest possible down payment.
- Determining whether a two-buyer household is efficiently allocating deductible contributions across the higher and lower income earners, and quantifying the improvement available by shifting contributions to the higher-income earner's accounts.
- Evaluating whether a buyer who is concerned about post-purchase cash flow should reduce or eliminate their HBP reliance, and quantifying the cost of that decision in terms of foregone down payment.
- Comparing the Max Down Payment and Max Flexibility optimization modes for a buyer with significant income volatility, to identify which strategy better protects their financial position across a range of outcomes.

Interface Description

The optimizer is a single-page web application that loads entirely in a browser with no account, login, or server dependency. The interface is divided into an input column on the left containing the Scenario Setup, Buyer 1, Buyer 2 (when two buyers are selected), and action buttons sections, and a results column on the right containing the Recommended Strategy panel and the Projected Household Timeline chart. Below the two-column layout, full-width sections display the Strategy Comparison table, the Year-by-Year Breakdown table, and the Lead Capture panel.

A dark hero banner at the top of the page displays the tool title, a brief description, and the advisor's branding. The tool runs calculations only when the Run Optimizer button is clicked; results do not update automatically as fields are edited.

Input Column

Scenario Setup

The Scenario Setup section captures the household-level parameters that govern the projection environment: which tax year's rules apply, which province's tax rates are used, how long the projection runs, what investment return to assume, which optimization objective to apply, whether tax refunds are reinvested, and whether the scenario involves one buyer or two.

Field	Description
Tax Year	The tax year whose contribution rules and tax rates govern the projection. The optimizer contains a full embedded rules dataset for 2026, covering all Canadian provinces and territories, with federal and provincial tax brackets, basic personal amounts, FHSA program rules, RRSP parameters, HBP limits, and TFSA annual room.
Province	The province or territory in which the buyer resides, used to apply the correct provincial tax brackets and basic personal amount. All thirteen Canadian provinces and territories are supported: Ontario, British Columbia, Alberta, Quebec, Manitoba, Saskatchewan, Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland & Labrador, Northwest Territories, Nunavut, and Yukon.
Years to Purchase	The number of years over which the projection runs, from 1 to 15. This is the planning horizon — the model will project account balances, contributions, and tax savings from now until the end of this period, at which point the projected down payment is calculated.
Annual Return Assumption (%)	The assumed annual rate of return on all account balances and new contributions. Applied using a mid-year convention: the new year's contributions are assumed to earn half a year of return in the year they are contributed. The same return rate applies to FHSA, RRSP, TFSA, and non-registered balances.
Optimization Mode	Determines how strategies are scored and ranked. Max Down Payment prioritizes strategies that produce the largest projected down payment (weights: down payment 35%, tax efficiency 22%). Max Flexibility prioritizes strategies that keep more funds in liquid or easily

Field	Description
	accessible accounts, penalizing heavy RRSP/HBP reliance (weights: flexibility 25%, down payment 22%). Min HBP Repayment Burden heavily penalizes strategies that result in large HBP withdrawals and therefore large annual repayment obligations after purchase (weights: future burden 27%, down payment 20%).
Reinvest Tax Refunds?	When set to Yes, the estimated annual tax refund generated by deductible FHSA and RRSP contributions is modelled as being reinvested into available account room in the following order: remaining FHSA room, then TFSA room, then non-registered. When set to No, the tax refund is treated as spent and is not added to projected balances. Reinvesting refunds consistently can materially improve the projected outcome for high-income earners with significant deductible contribution room.
Number of Buyers	Selects whether the scenario models one buyer or a two-buyer household. When two buyers are selected, the Buyer 2 input card becomes active and the optimizer evaluates strategies for each buyer independently before combining the results at the household level. Cross-buyer optimization scoring measures how effectively the household is concentrating deductible contributions in the higher-income earner's accounts.

Buyer 1 and Buyer 2 Input Cards

Each buyer has an identical set of input fields covering their income profile, current account balances, contribution room availability, and HBP intent. When two buyers are selected, both cards are active and the optimizer runs separate per-buyer projections before aggregating to household totals.

Field	Description
Annual Income	The buyer's current gross annual employment income. Used to calculate the marginal tax rate for the purpose of estimating the tax savings generated by deductible FHSA and RRSP contributions, and to calculate annual RRSP room accrual for future years.
Income Growth (%)	The assumed annual rate of income growth. Applied each year to project the buyer's income forward, which affects the marginal tax rate applied to deductions in each future year and the new RRSP room that accrues from the prior year's income.
Annual Savings Capacity	The total amount the buyer can save each year across all accounts. This is the budget that the optimizer allocates across FHSA, RRSP, TFSA, and non-registered in each year of the projection. It is also grown at the income growth rate each year, modelling the assumption that savings capacity increases as income increases.
Current FHSA Balance	The current balance in the buyer's FHSA. This is the starting balance for the FHSA projection — it will grow at the assumed annual return rate and receive new contributions each year up to the available room.

Field	Description
Current RRSP Balance	The current balance in the buyer's RRSP. This starting balance grows at the assumed return rate. For HBP purposes, the eligible withdrawal is capped at the program limit (\$60,000 per person as of 2026) applied to the balance at the time of purchase.
Current TFSA Balance	The current balance in the buyer's TFSA. Grows at the assumed return rate and receives new contributions each year up to the remaining contribution room.
Current Non-Registered Savings	Any savings held outside registered accounts. These balances are included in the projected total purchase funds but are not eligible for tax deductions and do not benefit from registered account tax treatment on growth.
FHSA Contributions Used to Date	The total lifetime FHSA contributions the buyer has already made. Used to calculate how much lifetime contribution room remains (lifetime limit is \$40,000 per person). A warning is displayed if this value exceeds the lifetime limit. Carry-forward room is calculated as the lesser of \$8,000 and the unused annual room from the prior year.
Unused FHSA Carry-Forward Room	Any unused annual FHSA contribution room from the prior year that the buyer can carry forward. Under current FHSA rules, up to one year of unused room (\$8,000) can be carried forward to the next year, allowing up to \$16,000 in contributions in a year where the buyer has accumulated carry-forward room. This field captures any carry-forward room already accumulated before the projection begins.
RRSP Contribution Room	The total unused RRSP contribution room available to the buyer at the start of the projection. The optimizer respects this room ceiling and does not recommend contributions that exceed it. New room accrues each year at 18% of the prior year's earned income, capped at the annual dollar limit (\$33,810 for 2026), and is added to the available room at the start of each new projection year.
TFSA Contribution Room	The total unused TFSA contribution room available at the start of the projection. New room accrues at the fixed annual amount (\$7,000 for 2026) and is added at the start of each projection year from year two onward.
Use HBP?	Indicates whether the buyer intends to use the RRSP Home Buyers' Plan at the time of purchase. When set to Yes, the RRSP balance at the time of purchase (up to the \$60,000 HBP limit) is included in the projected purchase funds and the HBP repayment burden is calculated and included in the scoring. When set to No, the RRSP balance is excluded from purchase fund projections and no HBP repayment obligation is modelled.

Action Buttons

The Run Optimizer button executes the full projection and scoring for all eight strategies and displays the results. The Reset Demo Inputs button restores all fields to the built-in demonstration values (two buyers, Ontario, five-year horizon, Balanced defaults). The Show Embedded Rules JSON button toggles the display of the complete tax rules and program

parameters dataset embedded in the tool, which allows technically proficient users to verify the rates and limits being applied.

Results Column

Recommended Strategy Panel

The Recommended Strategy panel is the primary output element. It displays the name of the highest-scoring strategy for the selected optimization mode, together with six key metrics for that strategy: Projected Down Payment (the total funds available for purchase — FHSA balance + HBP-eligible RRSP + TFSA + non-registered), Projected Tax Savings (the cumulative estimated tax savings over the projection horizon), Projected FHSA Funds, RRSP via HBP (the HBP-eligible portion of the RRSP balance, capped at the per-person limit), Projected TFSA Funds, and Annual HBP Repayment (the estimated annual repayment obligation after purchase if the HBP is used).

Below the metrics grid, a plain-language Insight box describes the recommended strategy, identifies the runner-up strategy for comparison, and reports the component scores (down payment, tax efficiency, flexibility, future burden, and timing) that determined the ranking. The insight also notes the optimization mode in effect and adjusts its commentary accordingly.

Projected Household Timeline Chart

A stacked area chart showing the projected growth of household savings over the planning horizon. Four series are displayed: FHSA balance (red), RRSP HBP-eligible balance (black), TFSA balance (light grey), and a composite total funds line. Year labels are shown along the horizontal axis and dollar values along the vertical axis. The chart reflects the recommended strategy's year-by-year contribution allocations and the compounded growth of all balances.

Full-Width Output Sections

Strategy Comparison Table

A ranked table showing all evaluated strategies side by side. Each row represents one strategy, ranked from highest to lowest composite score. The columns display the strategy name, projected down payment, cumulative tax savings, FHSA balance, RRSP/HBP eligible amount, TFSA balance, non-registered balance, annual HBP repayment, and composite score. The top-ranked strategy is highlighted with a "Best" badge. This table allows the user to understand not just which strategy is recommended but by how much it leads the alternatives, and to assess whether a slightly lower-scoring strategy might be preferred for reasons not captured in the composite score.

Year-by-Year Breakdown Table

A detailed table showing the recommended strategy's year-by-year projection. Each row represents one year of the planning horizon. The columns display the year number, combined household income (projected forward at the income growth rate), combined annual savings, FHSA contribution, RRSP contribution, TFSA contribution, FHSA balance, RRSP balance, TFSA balance, non-registered balance, estimated annual tax savings, and total projected purchase funds at the end of that year. This table is the primary implementation reference for a

buyer following the recommended strategy: each row tells them exactly what to contribute to each account in that year.

Lead Capture and Branded Follow-Up

A panel for recording client contact details, generating a branded PDF export, and facilitating follow-up actions. Fields are provided for client name, email address, phone number, and referral partner. A co-branding section allows a partner company name and email to be entered for co-branded outputs. Three action buttons provide options: Export PDF generates a print-formatted summary of the results; Email Results prepares an email message containing the key output; Book a Strategy Call facilitates scheduling a follow-up consultation. Contact information for the advisor is displayed at the bottom of the panel.

Scenarios

The four scenarios below illustrate how the optimizer is used in different planning contexts. Each begins with a description of the client's situation and what the advisor was trying to determine, describes how the optimizer was configured and run, and concludes with the decisions that the results made available.

Scenario 1 — Single Buyer Maximizing a Five-Year Down Payment

The Situation

Fatima is 29 years old, earning \$88,000 per year in a stable public sector role in Ontario. She has been saving diligently for three years and has accumulated \$14,000 in her FHSA (against \$14,000 lifetime contributions used), \$18,000 in her RRSP, and \$20,000 in her TFSA. She has no non-registered savings. Her current RRSP contribution room is \$28,000 and her TFSA contribution room is \$38,000. She expects her income to grow at approximately 2% per year and can save \$18,000 per year. She plans to purchase in five years and intends to use the HBP.

Her goal is straightforward: maximize the down payment she will have in five years. She has heard conflicting advice about whether to prioritize RRSP or TFSA contributions after maxing out her FHSA, and she wants a data-driven answer specific to her situation.

How the Optimizer Was Used

The advisor loaded the optimizer and configured the inputs as follows.

Scenario Setup: tax year 2026, province Ontario, years to purchase 5, annual return 5%, optimization mode Max Down Payment, reinvest tax refunds Yes, number of buyers 1.

Buyer 1: annual income \$88,000, income growth 2%, annual savings capacity \$18,000, current FHSA \$14,000, current RRSP \$18,000, current TFSA \$20,000, current non-registered \$0, FHSA contributions used \$14,000, unused FHSA carry-forward \$0, RRSP room \$28,000, TFSA room \$38,000, use HBP Yes.

The optimizer was run.

The recommended strategy was FHSA → RRSP/HBP → TFSA, with a projected down payment of \$158,400 and projected cumulative tax savings of \$19,200 over five years. The component scores were: down payment 100/100, tax efficiency 82/100, flexibility 38/100, future burden 61/100, and timing 72/100.

The runner-up was FHSA → RRSP to Next Lower Bracket → TFSA, with a projected down payment of \$156,100 — \$2,300 less. The insight box noted that at Fatima's income level, full RRSP contributions in every year produced better down payment results than bracket-targeting because her income was not near a bracket threshold and the full marginal rate deduction was more valuable than the partial contribution.

The Year-by-Year Breakdown showed that in years one and two, the full \$8,000 FHSA annual limit would be contributed, with the remaining \$10,000 allocated to RRSP each year. From year three onward, as RRSP room was depleted, more savings flowed to TFSA. The annual tax savings ranged from \$3,600 in year one to \$4,100 in year five as income grew.

Decisions Enabled by the Results

- Fatima confirmed that maximizing RRSP contributions after the FHSA — not TFSA — was the correct priority for her goal. The TFSA-first strategy (FHSA → TFSA) produced only \$152,800 in projected down payment, \$5,600 less, because it forgone the tax savings from RRSP deductions that were reinvested under the recommended strategy.
- The projected annual HBP repayment of \$3,867 was identified as a planning item. Fatima had not fully appreciated that withdrawing the full HBP-eligible amount at purchase would create a \$3,867 annual repayment obligation for fifteen years. She reviewed this figure against her expected post-purchase cash flow and confirmed it was manageable.
- The advisor noted the low flexibility score (38/100) of the recommended strategy and asked Fatima whether post-purchase liquidity was a concern. She confirmed it was not — she had stable employment and no expected major expenses after closing. The low flexibility score was therefore acceptable given her goal.
- The Year-by-Year Breakdown provided an implementation roadmap. Fatima left the meeting with a specific contribution plan: \$8,000 FHSA and \$10,000 RRSP in year one, with the exact same split in year two before the RRSP room began constraining contributions in year three. She could implement year one's plan immediately without waiting for further advice.

Scenario 2 — Two-Buyer Household and Cross-Buyer Tax Optimization

The Situation

Daniel and Sophie are planning to purchase together in four years. Daniel earns \$125,000 per year in British Columbia; Sophie earns \$65,000. Daniel has \$12,000 in his FHSA (used \$12,000), \$30,000 in RRSP, \$18,000 in TFSA, and \$8,000 non-registered; his RRSP room is \$42,000 and TFSA room is \$45,000. Sophie has \$6,000 in her FHSA (used \$6,000), \$12,000 in RRSP, \$15,000 in TFSA, and \$0 non-registered; her RRSP room is \$22,000 and TFSA room is \$52,000. Daniel saves \$22,000 per year; Sophie saves \$12,000 per year. Both intend to use the HBP and expect 2% income growth.

They are currently splitting contributions roughly equally across accounts without a deliberate strategy. The advisor's objective is to determine whether their current approach is tax-efficient and to quantify the improvement available by optimizing the allocation across both buyers.

How the Optimizer Was Used

The advisor configured the optimizer with two buyers reflecting Daniel and Sophie's actual profiles, Max Down Payment mode, British Columbia, four-year horizon, 5% return, and reinvest tax refunds Yes. The optimizer was run.

The recommended strategy was FHSA → RRSP/HBP → TFSA for both buyers, with a projected combined down payment of \$241,700 and combined tax savings of \$38,400 over four years. The cross-buyer optimization score was 78/100.

The insight box flagged that at Daniel's income level (\$125,000 growing at 2%), his marginal combined federal and BC provincial rate was approximately 43.7% — materially higher than Sophie's approximate 35.3%. The 78/100 cross-buyer score indicated that the recommended strategy was concentrating the majority of deductible contributions in Daniel's accounts, where the per-dollar tax benefit was higher, but there was still some room to improve.

The advisor then ran a sensitivity test: in the Buyer 2 card, Sophie's RRSP contribution was manually reduced and Daniel's RRSP room was increased to reflect shifting \$5,000 of RRSP contribution per year from Sophie to Daniel (after confirming Daniel had sufficient room). Re-running the optimizer with this adjustment showed the cross-buyer score improving to 91/100 and the projected combined tax savings increasing to \$41,200 — an additional \$2,800 over four years.

Decisions Enabled by the Results

- Daniel and Sophie confirmed that their existing approach — splitting contributions roughly equally — was modestly suboptimal from a tax efficiency standpoint. The cross-buyer optimization analysis showed that shifting the majority of RRSP contributions to Daniel, where the deduction was worth approximately 8 additional cents per dollar, would produce \$2,800 in additional household tax savings over four years.
- The combined projected down payment of \$241,700 was larger than either buyer had expected. The FHSA contributions for both buyers (\$8,000 per year each, with carry-forward room where applicable) were identified as the highest-priority allocation for both — the FHSA provides a deduction at purchase and a tax-free withdrawal, making it categorically superior to both the RRSP/HBP and the TFSA for qualifying first-time buyers.
- The annual HBP repayment for both buyers combined was projected at \$8,000 per year (\$4,000 per person). The advisor reviewed this against their expected combined post-purchase income and noted that while manageable, this was a meaningful ongoing obligation. Sophie, in particular, chose to elect No HBP for her portion in a secondary run, which reduced her projected down payment by \$9,200 but eliminated her \$2,800 per year repayment obligation. She decided this trade-off was worth it given her expected career transition in the years following purchase.
- The Year-by-Year Breakdown provided individual implementation guidance for each buyer, showing exactly how much each should contribute to each account per year. This allowed them to plan independently without needing to coordinate contribution decisions each year beyond the initial strategy agreement.

Scenario 3 — Minimizing HBP Repayment Burden for a Cash-Flow-Sensitive Buyer

The Situation

Marcus is 35 years old, self-employed in Alberta, with variable income averaging \$95,000 per year. He is planning to purchase in three years and is acutely aware that his post-purchase cash flow will be tight: the mortgage payment on the property he is targeting will consume a significant portion of his monthly income, and he cannot afford a large annual repayment obligation on top of that. He has \$10,000 in FHSA (used \$10,000), \$25,000 in RRSP, \$22,000 in

TFSA, and \$3,000 non-registered. His RRSP room is \$30,000 and TFSA room is \$44,000. He can save \$15,000 per year and plans to use the HBP.

He initially asked the advisor to run Max Down Payment mode. The advisor ran that first, then ran Min HBP Repayment Burden to show Marcus the trade-off between a larger down payment and a smaller post-purchase repayment obligation.

How the Optimizer Was Used

First run: one buyer, Alberta, three-year horizon, 5% return, Max Down Payment, reinvest refunds Yes, HBP Yes. Marcus's inputs as described above.

The Max Down Payment result recommended FHSA → RRSP/HBP → TFSA with a projected down payment of \$112,800 and annual HBP repayment of \$3,800 after purchase. The future burden component score was 42/100, flagging that the repayment drag was material relative to Marcus's income.

Second run: all inputs identical, optimization mode changed to Min HBP Repayment Burden.

The Min HBP Repayment Burden result recommended FHSA → TFSA → RRSP/HBP with a projected down payment of \$108,100 — \$4,700 less — but an annual HBP repayment of \$2,267, a reduction of \$1,533 per year. The future burden component score improved to 78/100. The insight box noted that the strategy shifted contributions away from RRSP and toward TFSA in years two and three, deliberately limiting the RRSP balance at the time of purchase and therefore the HBP-eligible withdrawal amount.

The advisor also ran the TFSA-First strategy manually through the Strategy Comparison table: it showed a projected down payment of \$105,400 and an annual HBP repayment of \$1,867, the lowest of any strategy, at a cost of \$7,400 relative to the Max Down Payment recommendation.

Decisions Enabled by the Results

- Marcus saw for the first time that the choice between optimization modes had a concrete financial impact: \$4,700 in projected down payment versus \$1,533 per year in reduced repayment obligation. Over the fifteen-year repayment period, the Min HBP Repayment Burden strategy would save \$23,000 in total repayments, more than recovering the foregone down payment. This reframing — from a one-time down payment cost to a fifteen-year cash flow trade-off — was decisive for Marcus.
- He chose the Min HBP Repayment Burden strategy. The Year-by-Year Breakdown showed that in year one, contributions would be \$8,000 FHSA and \$7,000 TFSA. In years two and three, RRSP contributions would begin after FHSA room was exhausted, but at a lower level than the Max Down Payment strategy. This explicit plan allowed Marcus to manage his RRSP contributions deliberately rather than defaulting to filling all available room.
- The advisor noted that Marcus's future burden score of 42/100 under the Max Down Payment strategy was a signal worth paying attention to for a self-employed buyer with variable income. The annual repayment of \$3,800 represented approximately 4% of his average annual income, which the scoring model flags as a material drag. For an employee with stable income this might be acceptable; for a self-employed buyer in a variable income year, it represented a real cash flow risk.

- Marcus confirmed HBP Yes in both runs, noting that he still wanted the option to use the HBP — he simply wanted to limit the withdrawal amount. The Year-by-Year Breakdown under the recommended strategy showed the RRSP balance at the end of year three, which confirmed the maximum HBP withdrawal he could make while staying within the annual repayment comfort zone he had identified.

Scenario 4 — Comparing Max Down Payment and Max Flexibility for a Young Buyer with Uncertain Timeline

The Situation

Aisha is 26 years old, earning \$72,000 in Manitoba, with a seven-year target purchase horizon that she acknowledges may shift depending on life circumstances. She has \$8,000 in FHSA (used \$8,000), \$10,000 in RRSP, \$15,000 in TFSA, and no non-registered savings. Her RRSP room is \$20,000 and TFSA room is \$55,000. She saves \$14,000 per year and expects 3% income growth. She is uncertain whether to use the HBP — she is concerned about committing to a repayment obligation over fifteen years when she is not sure where her career will take her.

She wants to understand the difference between the Max Down Payment and Max Flexibility strategies, and specifically how much flexibility she gives up by optimizing for the largest possible down payment.

How the Optimizer Was Used

First run: one buyer, Manitoba, seven-year horizon, 5% return, Max Down Payment, reinvest refunds Yes, HBP Yes.

Result: recommended FHSA → RRSP/HBP → TFSA with projected down payment of \$171,200, tax savings of \$18,900, flexibility score 41/100, future burden 62/100.

Second run: same inputs, optimization mode changed to Max Flexibility.

Result: recommended FHSA → TFSA → RRSP/HBP with projected down payment of \$165,800, tax savings of \$16,400, flexibility score 79/100, future burden 74/100. The down payment difference was \$5,400 over seven years.

The advisor also ran the Max Down Payment mode with HBP set to No, to show Aisha what the picture looked like without any HBP exposure.

Result with HBP No: FHSA → TFSA (no RRSP for purchase purposes), projected down payment \$148,900 — \$22,300 less than the HBP-using Max Down Payment result, and \$16,900 less than the Max Flexibility result with HBP. Annual HBP repayment \$0.

Decisions Enabled by the Results

- Aisha immediately saw that the cost of flexibility — shifting from Max Down Payment to Max Flexibility mode — was \$5,400 in projected down payment over seven years. She described this as a "reasonable cost for peace of mind" and elected to proceed with the Max Flexibility strategy. The higher flexibility score (79 versus 41) meant that more of her projected funds would be in TFSA — which can be accessed for any purpose, not

just home purchase, if her plans change — rather than in RRSP accounts subject to the HBP repayment obligation.

- The complete HBP-off scenario — a \$22,300 reduction in projected down payment — was informative but Aisha decided it was too large a cost. She elected to keep HBP Yes under the Max Flexibility mode, noting that the lower RRSP balance under that strategy would in any case result in a lower HBP withdrawal and therefore a more manageable repayment obligation.
- The seven-year horizon produced a meaningful compounding effect that surprised Aisha. Even under the lower-priority Max Flexibility strategy, \$165,800 in projected purchase funds represented more than eleven times her current total savings of \$14,700. The Year-by-Year Breakdown made this trajectory visible and gave her confidence that consistent execution of the plan over seven years would produce a materially different financial position.
- The reinvest tax refunds Yes setting proved particularly valuable over a seven-year horizon. The advisor ran a comparison with refunds set to No: the Max Flexibility projected down payment fell from \$165,800 to \$151,200 — a \$14,600 difference driven entirely by the compounding effect of reinvested FHSA and RRSP tax refunds. Aisha committed to directing her annual tax refunds to her FHSA and TFSA each year, a specific and implementable action that the optimizer quantified concretely.
- The Strategy Comparison table showed all eight strategies ranked under the Max Flexibility mode. Aisha noted that the Balanced Split strategy was ranked third, just below the recommended FHSA → TFSA → RRSP/HBP. The difference was small (\$2,100 in projected down payment) and the flexibility score for the Balanced Split was 71/100 versus 79/100 for the recommended strategy. She asked the advisor whether the Balanced Split might be a reasonable alternative — the advisor confirmed it was, particularly if Aisha wanted to build RRSP room earlier for potential tax savings in higher-income years. This became a secondary planning note for revisiting the strategy at year three or four if her income grew above \$80,000.

Technical Specifications

This section describes the mathematical logic and design rationale behind the optimizer's calculations at a high level. It is intended for readers who want to understand why the optimizer produces the numbers it produces, not merely how to enter inputs and read outputs. All calculations execute client-side in the browser with no server transmission.

Tax Calculation Model

The optimizer calculates income tax using a progressive bracket model applied independently to federal and provincial/territorial taxable income. For each buyer and each year of the projection, the model applies the bracket structure for the selected tax year and province, computes the gross tax payable, then subtracts the basic personal amount credit (calculated as the basic personal amount multiplied by the lowest bracket rate, consistent with standard Canadian tax credit mechanics). The resulting net federal and provincial taxes are summed to produce the total estimated combined tax.

The tax saving from a deductible contribution is calculated as the difference between total tax on income before the deduction and total tax on income after the deduction. This correctly captures the marginal rate applicable to the deductible amount, accounting for bracket interactions when a deduction spans a bracket threshold.

The combined marginal rate for a given income level is derived by identifying the applicable federal bracket rate and provincial bracket rate at that income, and summing them. This rate is used in the timing optimization scoring to assess whether RRSP contributions are being made at a favourable marginal rate relative to the projected future marginal rate.

FHSA Carry-Forward Mechanics

The optimizer models FHSA contribution room year by year using the actual Canadian program rules. In each projection year, available FHSA room for the year is calculated as the annual contribution limit (\$8,000) plus any carry-forward room from the prior year (capped at \$8,000), subject to the remaining lifetime contribution limit (\$40,000 less cumulative contributions to date).

At the end of each projection year, the carry-forward room for the following year is set to the lesser of \$8,000 and the unused annual room from the year just completed — that is, the amount by which the buyer's actual FHSA contribution fell short of the \$8,000 annual limit. If the buyer contributes the full annual limit, no carry-forward room accumulates. If the buyer contributes less than the limit, up to \$8,000 of unused room carries forward. This mechanic is modelled year by year for the full projection horizon.

RRSP Room Accrual

New RRSP contribution room accrues each year based on the prior year's earned income. The accrual formula is: $\text{new room} = \text{prior year income} \times 18\%$, capped at the annual dollar limit (\$33,810 for 2026). This new room is added to the buyer's available RRSP room at the start of year two and each subsequent year. As a result, RRSP room available for contribution grows each year even if the buyer does not use all existing room — this is the standard behaviour of the CRA's RRSP room system.

The "prior year income for RRSP" is tracked separately from the current year income projection to ensure that room accrues on the correct base. In year one, the prior year income is estimated from the current year income and the income growth rate. From year two onward, the actual projected income from the prior year is used.

Contribution Allocation Strategies

The optimizer evaluates eight distinct contribution allocation strategies. In each year of the projection, the strategy defines how the buyer's available savings capacity is allocated across FHSA, RRSP, TFSA, and non-registered accounts, subject to the available contribution room in each account.

The eight strategies are: FHSA → TFSA (after maxing FHSA, fill TFSA room first, then non-registered); FHSA → RRSP/HBP → TFSA (after FHSA, fill available RRSP room, then TFSA); FHSA → RRSP to Next Lower Bracket → TFSA (after FHSA, contribute to RRSP only up to the amount needed to bring income down to the next lower combined tax bracket threshold, then TFSA); Balanced Split (after FHSA, divide remaining savings 50/50 between RRSP and TFSA); FHSA → TFSA → RRSP/HBP (after FHSA, fill TFSA first, then RRSP); TFSA First (TFSA before FHSA, then RRSP); FHSA + TFSA Reserve (FHSA first, then 75% to TFSA reserve, then 50% of remainder to RRSP); and RRSP Heavy in High-Rate Year (FHSA first, then contribute heavily to RRSP if the combined marginal rate is above 34%).

All strategies respect contribution room constraints: no allocation can exceed the available room in any account type, and any savings not allocated to a registered account overflow to non-registered.

Balance Projection and Compounding

Account balances are projected forward each year using a mid-year return convention: $\text{growth}(\text{balance}, \text{annualContribution}, \text{annualReturn}) = \text{balance} \times (1 + \text{annualReturn}) + \text{annualContribution} \times (1 + \text{annualReturn} / 2)$. This formula applies the full annual return to the opening balance (which has been invested since the beginning of the year) and half the annual return to new contributions (which are assumed to be made at the midpoint of the year on average). The same return rate applies to all account types. In practice, the actual return on registered accounts depends on the investments held in those accounts, which may differ across account types; the single assumed return rate is a planning simplification.

When the reinvest tax refunds option is enabled, each year's estimated tax savings (attributable to FHSA and RRSP deductions) are added to the buyer's account balances at the end of the year, allocated first to available FHSA room, then to available TFSA room, and finally to non-registered if both registered rooms are exhausted. This reflects the assumption that the buyer deposits their tax refund cheque into their savings accounts in the same year it is received.

Strategy Scoring Framework

Each strategy is scored on a composite framework with five to seven component dimensions, weighted differently depending on the optimization mode selected.

Down Payment Score — the normalized projected down payment relative to the minimum and maximum across all evaluated strategies. A strategy that produces the highest projected down payment of all eight candidates scores 100; a strategy that produces the lowest scores 0.

Tax Efficiency Score — a composite of the Marginal Efficiency Index (MEI), which is the ratio of tax savings to deductible contributions, and the normalized tax savings across strategies. A strategy that generates the highest per-dollar tax saving on deductible contributions scores highest on this dimension.

Flexibility Score — a weighted measure of how much of the projected purchase funds are in accessible, non-encumbered form. TFSA funds score 1.0 (fully accessible, no repayment), non-registered score 0.8, FHSA score 0.6 (accessible but only for qualifying home purchase), and RRSP/HBP score 0.25 (accessible but subject to repayment obligation). Strategies with more TFSA and non-registered allocation score higher on flexibility.

Future Burden Score — a measure of the annual HBP repayment obligation as a ratio of the buyer's projected income at the end of the horizon. A repayment drag of 1% or less of income scores 100; 2% scores approximately 80; 4% scores 40; above 4% scores 20. This dimension is weighted most heavily under the Min HBP Repayment Burden optimization mode.

Timing Score — an assessment of whether RRSP contributions are being made at an advantageous marginal rate. A buyer who contributes to RRSP when their current marginal rate exceeds the projected future rate is contributing at the right time (the deduction is worth more today than it would be in the future). Conversely, a buyer contributing to RRSP when their rate is expected to rise significantly may be better served by deferring. The timing score rewards early RRSP contributions for buyers at or near their peak marginal rate and penalizes RRSP-heavy strategies for buyers in rising-income trajectories.

Cross-Buyer Optimization Score (two-buyer scenarios only) — measures the proportion of total deductible contributions made to the higher-income earner's accounts. Since deductible contributions are more valuable when the marginal rate is higher, a household that concentrates FHSA and RRSP contributions in the higher-income earner's accounts will receive more total tax savings per dollar of deductible contribution. A score of 100 means all deductible contributions are in the higher-rate earner's accounts; 50 means contributions are split equally without regard to marginal rate.

Strategy Efficiency Ratio — the ratio of projected purchase funds to total contributions made over the projection horizon. This rewards strategies that produce a high return on the dollars actually contributed, accounting for the compounding and tax effects that amplify certain strategies.

The final composite score is a weighted average of these components. Weights differ by optimization mode: Max Down Payment emphasizes down payment (35%) and tax efficiency (22%), with modest weight on other dimensions. Max Flexibility shifts weight toward flexibility (25%) and reduces down payment weight (22%). Min HBP Repayment Burden increases the future burden weight to 27% while maintaining meaningful down payment weight (20%).

HBP Eligible Amount Calculation

The HBP-eligible amount for a buyer is the lesser of the buyer's projected RRSP balance at the end of the planning horizon and the per-person HBP withdrawal limit (\$60,000 for 2026). This is the amount that can be withdrawn tax-free at the time of purchase, added to the projected purchase funds, and repaid over fifteen years at \$4,000 per year ($\$60,000 \div 15$). The HBP repayment obligation begins two years after the year of withdrawal.

The RRSP balance included in the HBP calculation is the full projected RRSP balance, including the original opening balance, all contributions made during the projection, and compounded growth. However, only the HBP limit applies as a ceiling — a buyer with a \$90,000 RRSP balance can still only withdraw \$60,000 under the HBP.

When the buyer elects No HBP, the RRSP balance is excluded from projected purchase funds entirely. The RRSP balance continues to grow in the projection (it earns the assumed annual return), but it is not counted as available for the home purchase and no repayment obligation is modelled.

Compliance and Disclaimer

Compliance

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