

How Middlesex pays for its machines: six funding plans

Modeled FY2028–FY2042 on the town's six purpose-locked reserve funds · market-adjusted prices with apparatus contracts locked at order · every figure regenerates from the published data · hungermountaini.com/middlesex/capital-plans/ · a modeling exercise by Matt Rkiouak, Budget Committee member — not adopted policy

The pattern

Every large machine the town runs was bought the same way: vote, sign, pay for years. The March 2024 excavator article is the template — a \$182,000 note at 5.97% that will cost \$69,251 in interest by its final payment in 2035, signed while the reserve fund kept for exactly this kind of machine earned 0.7% and, by that first year's end, held half the price. In fiscal 2025 the town spent \$258,327 on capital purchases and debt payments against a budgeted capital line of \$126,000. Entering FY2028 the six funds hold \$341,657 while the notes still running carry \$446,900 — the town's capital accounts are \$105,243 short of its capital debts.

The position

Every figure in this report is in today's dollars: no general inflation is assumed, and actual future bills rise with inflation for every plan alike, home values and the grand list with them — the comparisons stand. The town's capital plan prices fifteen years of replacements, but fire-apparatus contracts sign ~3 years before delivery and escalate ~7%/yr — so both engine orders, the overdue trucks, and the Shady Rill project all commit money by FY2031. At market prices even current practice averages \$472k/yr (peaking near \$612k) — the choice is not whether to pay, but what the town owns afterward. Reserves earn the town's realized 0.7% today (a market-rate account at ~3.5% is itself a worthwhile reform — see stress tests). One cent on the municipal rate raises about \$24,000; tax impacts compare to the \$268,022 FY2027 non-flood capital+debt spend — the \$126,000 capital line plus that year's four debt payments (fire station bond \$46,817, grader note \$25,572, excavator note \$27,979, Kenworth note \$41,654, its final year) — not the capital line alone, because every plan absorbs those payments as they retire. In absolute terms the plans ask between \$127 and \$143 a year per \$100,000 of home market value. The flood-recovery debt line (\$465,528/yr through FY2031, \$288,260 in FY2032) is identical under every plan and excluded from all of them — a FEMA-reimbursement bridge the town expects to clear by about FY2029; the line is its contractual worst case. Every figure prices known needs only: the schedule lists the machines the town owns today on their historical cycles; whatever fifteen years add arrives on top — under the borrowing plans, as interest on a larger principal.

The six plans

Current practice

The town's recent pattern: an inconsistent capital line, funds that sometimes pay and sometimes sit, and full financing for the rest.

The capital appropriation wobbles between \$126,000 and \$101,000 as it has in recent budgets; a reserve fund pays for an item only when it covers the whole price, as the audit shows; everything else is financed in full — the truck fleet through vendor installment programs, fire apparatus and paving through the plan's capital-program bonds — with debt service riding the tax bill. It also keeps feeding the Bridge and Court Resurfacing funds, which have no scheduled work in the window, and that flatters the position this plan ends with: about \$231,000 of its closing balance cannot buy anything on the schedule, so the −\$50,000 shown above is nearer −\$281,000 of usable capital position, and under 24 V.S.A. § 2804 the money cannot be turned to another purpose without a warned article. Every plan carries the same \$69,000 of opening balances in those two funds; only current practice keeps adding to them.

\$222,681	\$472k/yr	\$128/yr	\$997k	2 / 12	−\$50k	\$7.11M
FY2028 capital budget (−1.9¢ on the rate)	average FY28–42	per \$100k of home value	interest paid	bond votes / note articles	owns – owes, 2042	true cost

Save \$50,000 more a year

The smallest genuine change: current practice plus a \$50,000 annual seed, steered to where the need is. Same structure as current practice — debt service on the tax bill — but the fund is drawn toward each purchase before borrowing, and the Select Board steers contributions annually to the funds with upcoming needs.

\$272,681	\$465k/yr	\$127/yr	\$772k	1 / 13	\$48k	\$6.83M
FY2028 capital budget (+0.2¢ on the rate)	average FY28–42	per \$100k of home value	interest paid	bond votes / note articles	owns – owes, 2042	true cost

Phased start from \$300k (reaches \$470k in FY2032)

Begin at \$300,000 and climb steeply to the break-even budget of \$470,000 by FY2032. Because apparatus contracts sign years before delivery, the spending crunch sits at the front of this window — so a phased start only works with steep steps, peaking near \$630,000 mid-climb before settling. Starting low defers cost at interest.

\$300,000	\$470k/yr	\$128/yr	\$883k	2 / 12	\$13k	\$6.98M
FY2028 capital budget (+1.3¢ on the rate)	average FY28–42	per \$100k of home value	interest paid	bond votes / note articles	owns – owes, 2042	true cost

Break even by 2042 (\$470k/yr)

A steady \$470,000 capital budget — the smallest at which the town owns as much as it owes by 2042. One annual capital budget inside the budget article, allocated by the Select Board across the existing purpose funds (no new articles needed); the equipment funds pay the equipment notes. Solving for the smallest levy is not solving for cost: the seed plan runs about \$110,000 cheaper all in, and every larger steady budget costs less in the end.

\$470,000	\$472k/yr	\$128/yr	\$853k	2 / 12	\$67k	\$6.94M
FY2028 capital budget (+8.4¢ on the rate)	average FY28–42	per \$100k of home value	interest paid	bond votes / note articles	owns – owes, 2042	true cost

Step up to \$530k/yr (by FY2030)

Enter at \$450,000, reach a steady \$530,000 by FY2030, and let the margin above break-even compound into equity. Same single-budget structure as the break-even plan, sized past it: two \$40,000 steps reach \$530,000 and hold. The margin above break-even becomes fund balances rather than interest — the fifteen-year true cost is within about \$120,000 of saving \$50,000 more a year, and the town ends 2042 owning about \$990,000 more.

\$450,000	\$524k/yr	\$143/yr	\$673k	1 / 10	\$1.04M	\$6.71M
FY2028 capital budget (+7.6¢ on the rate)	average FY28–42	per \$100k of home value	interest paid	bond votes / note articles	owns – owes, 2042	true cost

Full pre-funding (\$525k/yr)

A steady \$525,000 capital budget: one town Capital Reserve Fund, and no borrowing after FY2031. The East Montpelier structure: voters establish one broad Capital Reserve Fund (new money only — the legacy funds spend down on their own purposes), a single bond covers the engine orders, and every later purchase is cash. It carries the smallest bond of any plan, pays the least interest, and exits 2042 with about \$1.15 million of equity.

\$525,000	\$527k/yr	\$143/yr	\$604k	1 / 4	\$1.15M	\$6.64M
FY2028 capital budget (+10.7¢ on the rate)	average FY28–42	per \$100k of home value	interest paid	bond votes / note articles	owns – owes, 2042	true cost

What the town owns minus what it owes (all funds – capital debt)



This counts every reserve fund, including Bridge and Court Resurfacing, which have no scheduled work in the window. That overstates the usable position of every plan, and of current practice most: it alone keeps contributing to those two funds, ending 2042 with about \$231,000 in them against \$77,000 for the rest — money no scheduled purchase can draw on, and which 24 V.S.A. § 2804 bars from other uses absent a warned article.

The annual capital budget, FY2028-FY2042



Capital debt outstanding at year-end



Fifteen-year totals

Plan	True cost	Levies	Avg tax /yr	Per \$100k home /yr	Interest paid	Interest after FY2042	Interest earned	Borrowed	Owens – owes 2042	True cost, sheet prices
Current practice	\$7.11M	\$7.08M	\$472k	\$128	\$997k	\$82k	\$65k	\$4.51M	–\$50k	\$5.93M
Save \$50,000 more a year	\$6.83M	\$6.98M	\$465k	\$127	\$772k	\$6k	\$41k	\$3.16M	\$48k	\$5.65M
Phased start from \$300k (reaches \$470k in FY2032)	\$6.98M	\$7.06M	\$470k	\$128	\$883k	\$42k	\$38k	\$3.75M	\$13k	\$5.39M
Break even by 2042 (\$470k/yr)	\$6.94M	\$7.08M	\$472k	\$128	\$853k	\$38k	\$42k	\$3.53M	\$67k	\$5.34M

Plan	True cost	Levies	Avg tax /yr	Per \$100k home /yr	Interest paid	Interest after FY2042	Interest earned	Borrowed	Owens – owes 2042	True cost, sheet prices
Step up to \$530k/yr (by FY2030)	\$6.71M	\$7.86M	\$524k	\$143	\$673k	\$0k	\$51k	\$2.48M	\$1.04M	\$5.28M
Full pre-funding (\$525k/yr)	\$6.64M	\$7.90M	\$527k	\$143	\$604k	\$0k	\$52k	\$2.07M	\$1.15M	\$5.25M

True cost = levies minus the change in net position over the window (entering FY2028 at –\$105,243), plus interest scheduled after FY2042 on debt still outstanding — the borrowing plans sign notes to the edge of the window. Post-window earnings on ending fund balances are not credited. Per \$100k home: the plan's average annual capital budget expressed as tax on \$100,000 of home market value, assessed at the town's 65.33% common level of appraisal. "Sheet prices" re-runs each plan at the committee's as-published prices for reference.

One steady budget, sized at any level

The break-even plan's structure with only the size of the annual capital budget varied. Each dollar not raised is a dollar borrowed at 4% or more while the reserves earn 0.7%.

Steady budget	Borrowed	Interest paid	True cost	Owens – owes 2042
\$450,000	\$4.12M	\$940k	\$7.06M	–\$325k too low — a fund runs dry mid-plan
\$475,000	\$3.41M	\$833k	\$6.92M	\$164k
\$500,000	\$2.87M	\$726k	\$6.78M	\$649k
\$525,000	\$2.20M	\$625k	\$6.66M	\$1.13M
\$550,000	\$1.83M	\$533k	\$6.56M	\$1.61M
\$575,000	\$1.67M	\$500k	\$6.51M	\$2.03M
\$600,000	\$1.52M	\$472k	\$6.47M	\$2.45M
\$625,000	\$1.38M	\$442k	\$6.42M	\$2.87M
\$650,000	\$1.23M	\$408k	\$6.38M	\$3.30M
\$675,000	\$1.12M	\$383k	\$6.33M	\$3.71M
\$700,000	\$1.03M	\$356k	\$6.29M	\$4.13M

Alternatives tested

Six alternative schemes were run against the same rules — same schedule, same funds, same bond structure. Every scheme that beats the plans above shapes the tax ask to the front-loaded need — high through the engine-order years, stepping down after — and shrinks or eliminates the bond; the price is concentration, roughly \$900,000 a year through FY2031 on top of the flood debt line.

Scheme	Shape	Bond	True cost
Crunch levy	\$900k through FY2031, then \$450k	\$784k	\$6.70M
Note ladder	one surge year, three high years, then about \$292k; never bonds	none	\$6.71M
Crunch-first step-down	seven high years, then today's spend	\$1.4M	\$6.94M

Scheme	Shape	Bond	True cost
Steady \$650k	break-even structure at \$650,000	\$1.6M	\$6.94M
Bridge and defer	note-bridge FY2028, bond at second need	\$852k	\$6.91M
State-loan ladder	one state equipment loan (MEVLF) a year on a \$515k budget	\$1.5M	\$7.17M

Stress tests (true cost)

Scenario	P0	P1	P2	P3	P5	P4
Base case (market prices, 0.7% earnings, grants)	\$7.11M	\$6.83M	\$6.98M	\$6.94M	\$6.71M	\$6.64M
Reserves moved to a market-rate account (3.5%)	\$6.76M	\$6.61M	\$6.77M	\$6.70M	\$6.44M	\$6.37M
As-published sheet prices	\$5.93M	\$5.65M	\$5.39M	\$5.34M	\$5.28M	\$5.25M
No VTrans grants	\$8.10M	\$7.78M	\$8.18M†	\$8.15M†	\$7.90M	\$7.59M†
Bond Bank rate at 5.0%	\$7.28M	\$6.96M	\$7.20M†	\$7.17M	\$6.90M	\$6.79M†
Single consolidated bond (12-yr drawdown)	\$7.08M	\$6.83M	\$7.12M†	\$7.08M†	\$6.71M	\$6.64M

†Fixed levy schedule would run a fund negative under this scenario; a levy adjustment is implied.

Plan key: P0 = Current practice · P1 = Save \$50,000 more a year · P2 = Phased start from \$300k (reaches \$470k in FY2032) · P3 = Break even by 2042 (\$470k/yr) · P5 = Step up to \$530k/yr (by FY2030) · P4 = Full pre-funding (\$525k/yr).

What voters would be asked, and when

Fiscal year	Plan	Bond question	Amount financed
FY28	P0	Capital program bond (Engine 1, Engine 6, Tanker)	\$1,887,836
FY28	P1	Capital program bond (Engine 1, Engine 6, Tanker)	\$1,761,836
FY28	P2	Capital program bond (Engine 1, Engine 6, Tanker)	\$1,732,234
FY28	P3	Capital program bond (Engine 1, Engine 6, Tanker)	\$1,846,029
FY28	P4	Capital program bond (Engine 1, Engine 6, Tanker)	\$1,723,071
FY28	P5	Capital program bond (Engine 1, Engine 6, Tanker)	\$1,759,516
FY35	P0	Capital program bond (Rescue)	\$450,438
FY35	P2	Capital program bond (Rescue)	\$450,438
FY35	P3	Capital program bond (Rescue)	\$370,873

Australian-ballot questions for financings over five years (precedent: the March 2024 excavator article, 24 V.S.A. § 1786a(c)). Vendor truck installments (5.5%, five-year terms) and five-year bank notes take ordinary warned articles and are listed in the downloadable data.

Apparatus orders (price locks at contract)

Item	Order	Delivery	Sheet price	Locked price
Engine 6 (ordered pre-window)	FY27	FY30	\$500,000	\$655,398
Engine 1	FY30	FY33	\$500,000	\$802,891
Tanker	FY31	FY34	\$250,000	\$429,547

Item	Order	Delivery	Sheet price	Locked price
Rescue	FY35	FY38	\$200,000	\$450,438
Scheduled events (market basis, net of grants)				
FY	Item	Category	Market price	Grant
2028	Shady Rill section 1	Paving	\$652,333	\$521,866
2028	International 10-wheeler dump (backlog)	Public Works Vehicles	\$246,500	
2028	Caterpillar backhoe	Public Works Vehicles	\$153,000	
2028	Komatsu loader (backlog)	Public Works Vehicles	\$148,750	
2028	Overhead doors (3) (backlog)	Town Shed	\$11,000	
2028	Engine 6	Fire Dept Vehicles	\$655,398	
2029	Freightliner 6-wheeler dump (backlog)	Public Works Vehicles	\$238,000	
2029	Pickup with plow	Public Works Vehicles	\$68,000	
2029	Server (mechanical)	Town Hall	\$20,000	
2029	Overhead doors	Fire Station	\$11,000	
2030	Kenworth dump truck	Public Works Vehicles	\$178,500	
2030	Exterior windows	Town Hall	\$25,000	
2030	Engine 1	Fire Dept Vehicles	\$802,891	
2031	Town server replacement	Town Hall	\$20,000	
2031	Tanker	Fire Dept Vehicles	\$429,547	
2032	Boiler	Town Hall	\$20,000	
2032	Interior painting/flooring	Town Hall	\$9,000	
2033	Fuel tank	Town Shed	\$8,500	
2035	International 10-wheeler dump	Public Works Vehicles	\$246,500	
2035	Town server replacement	Town Hall	\$20,000	
2035	Rescue	Fire Dept Vehicles	\$450,438	
2036	Grader	Public Works Vehicles	\$289,000	
2037	Freightliner 6-wheeler dump	Public Works Vehicles	\$238,000	
2037	Pickup with plow	Public Works Vehicles	\$68,000	
2037	Exterior painting	Town Hall	\$12,000	
2038	Kenworth dump truck	Public Works Vehicles	\$178,500	
2039	Shady Rill section 2	Paving	\$296,515	\$237,212
2040	Kobelco excavator	Public Works Vehicles	\$170,000	
2040	Komatsu loader	Public Works Vehicles	\$148,750	
2040	HVAC	Fire Station	\$15,000	
2042	International 10-wheeler dump	Public Works Vehicles	\$246,500	
2042	Roof	Town Hall	\$25,000	

Plus \$30,000/yr routine paving. Class 2 grants: 80% of project cost (19 V.S.A. § 309b), which the town applies for and typically receives (confirmed by the Budget Committee).

Entering non-flood debt

Note	Rate	Balance entering FY2028	Structure	Paid from
Fire station bond (final FY2030)	4.19%	\$120,000	level principal \$40,000	tax levy (no fund purpose covers it)
Grader note (final FY2036)	2.45%	\$183,600	level principal \$20,400	Asset & Equipment fund in single-line plans
Excavator note (final FY2035)	5.97%	\$143,300	level principal \$18,200 + FY2035 residual	Asset & Equipment fund in single-line plans

Assumptions and caveats

1. Market-adjusted apparatus prices escalate the committee's 2023-vintage figures 7%/yr to order year; commercial-chassis class assumed. Both bases shown throughout; sheet prices are materially below what any contract will sign for. Everything else is priced in today's dollars — no general inflation is assumed, so levies are floors, not forecasts; actual future bills rise with inflation for every plan alike, leaving comparisons and rankings intact. The apparatus escalation is a contract-market fact, not an inflation forecast.
2. The schedule prices only the replacements the town can already see — the machines it owns, on their historical cycles. It carries no allowance for new needs, and fifteen years will bring them; every such dollar arrives on top of every figure shown, and under the borrowing plans as interest on a larger principal.
3. Reserve earnings at the town's realized 0.7%; moving reserves to a market-rate account (~3.5%) is a real reform shown in the stress tests.
4. Bank notes at 5.0%; the consolidated bond at a 4.0% Bond Bank assumption — the actual rate is set at the Bond Bank's sale (the town's May 2025 loan priced at 3.50%); a 5.0% stress column is shown. Vendor truck installments at 5.5% on five-year terms — the tax-exempt municipal band, with the town's 5.97% excavator note as the local datapoint. Interest is accrued annually on each instrument's opening balance. The town's notes and Bond Bank loans in fact pay semi-annually, which lowers a fiscal year's interest by roughly half a year's accrual on the declining balance — about \$1,600 a year across the three notes carried into the window. Every plan is priced on the same convention, so the comparisons are unaffected.
5. Bonds are bundled so each is drawn within three to four years of issue — standard practice, and what federal tax law expects: 85% of proceeds spent within three years for unrestricted investment (Treas. Reg. §1.148-2(e)(2)), 85% within five to keep the interest tax-exempt at all (IRC §149(g)). A single bond sized for twelve years of projects cannot meet either test, so it appears only as a stress case — its parked-proceeds cost charged honestly — not as an issuable instrument. Bond Bank access is open (two pooled sales a year, no fees, no frequency limit); what a second question spends is voter goodwill — the November 2024 town-hall bond, \$2.5 million, failed 610-534.
6. Class 2 paving grants at 80% of project cost (19 V.S.A. § 309b) — the share the town applies for and typically receives (confirmed by the Budget Committee, August 2026); they are annual awards, and the no-grants column shows the exposure.

7. The Shady Rill section 1 scope predates the 2023–24 flood reconstruction; re-scope before any warning article. It remains the largest single line.
8. The Bridge and Court Resurfacing funds have zero scheduled work in the window — the sheet, not the town, is missing culvert and court lines; reform plans stop feeding them until the town prices that work.
9. No major Town Hall or Town Garage project is included — the schedule carries only routine upkeep for both buildings (\$151,000 and \$19,500 over the window). Any major project, pending the Middlesex FIT proposal and Select Board endorsement or similar, would be new money on top of every plan shown.
10. Purchases at or under \$15,000 are cash-flowed inside their fund rather than financed, which can carry a fund briefly below zero — a payable within a –\$15,000 tolerance, never new borrowing; the workbook's fund tables flag any dip beyond it.
11. The flood-recovery debt is excluded from every plan and identical under all of them — a bridge, not a lasting burden: \$4.0 million of notes matured in 2025–26 while roughly \$7.2 million of FEMA money arrived, the remaining \$2.4 million is expected to be swept by further reimbursements, and more likely than not no net flood levy remains by about FY2029. The charted line is the contractual worst case; the realistic residual is a one-time \$400,000–700,000 of cost shares and compliance work.
12. Unconfirmed with the town: each fund's exact warned purpose language, interest crediting per fund, and a bridge/culvert program.
13. Reserve-fund funding votes bind for one year; every multi-year path here is an annually renewed intention, not a commitment.
14. Cents on the municipal rate are quoted against the 2025 grand list, where one cent raises about \$24,000. A reappraisal is commissioned for 2027; once it is final the same dollars will read as fewer cents on a larger list. Dollar figures, and what any household actually pays, are unaffected — a reappraisal is revenue-neutral in aggregate.

The model and its data are open: every number here regenerates from the published files in the site repository.