

IMAGINATION LIBRARY OF SAN ANTONIO

Fiscal Report
September 2024–May 2026

"You can
**never get
enough books**
into the hands of
enough children."

Dolly

A photograph of Dolly Parton, smiling and wearing her signature colorful, sequined vest over a yellow long-sleeved shirt. She is holding two children's books. One is titled "DOLLY PARTON" and the other is "Dolly Parton I Am a Rainbow".The logo for Dolly Parton's Imagination Library, featuring a circular emblem with a red barn and a white horse, with the text "Dolly Parton's IMAGINATION LIBRARY" below it.

Learn More at
ImaginationLibrary.com

A square QR code located at the bottom left of the promotional graphic.



The Imagination Library of San Antonio is a 501(c)(3) nonprofit organization based in San Antonio, Texas. At ILSA, we believe that books are the building blocks of a brighter future. Our mission is clear and unwavering: to ensure that all young children in San Antonio may have books to read.

<https://imaginationlibrarysa.org/>

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San Antonio, Texas, May 29, 2026



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ILSA

Chapter 1

Introduction



A Message from Our Board

Dear Friends, Supporters, and Community Partners,

We are proud to present the inaugural annual fiscal report for the Imagination Library of San Antonio (ILSA). As a newly established 501(c)(3) nonprofit organization, 2024 marked a pivotal year in our journey to transform early childhood literacy in our beloved city.

Our Foundation

In 2024, ILSA officially became a Local Program Partner of Dolly Parton's Imagination Library, joining a global network of communities committed to putting books in the hands of children from birth to age five. This milestone represents more than an organizational achievement—it signifies our community's collective commitment to ensuring that every child in San Antonio has access to the fundamental building blocks of learning and imagination.

Our Mission in Action

At ILSA, we believe that books are the building blocks of a brighter future. Our mission is clear and unwavering: to ensure that all young children in San Antonio may have books to read. We achieve this by enrolling kids in Dolly Parton's Imagination Library. By providing free, high-quality books to children from birth to age 5, we support early childhood education and inspire a lifelong love of reading.

Our Commitment

Guided by our small but dedicated board of community-minded individuals, we are driven by three fundamental goals:

- **Universal Enrollment:** Achieving equitable access to books by enrolling all eligible children in every zip code throughout San Antonio, Texas
- **Community Investment:** Increasing donations and sponsorships to launch, grow, and sustain this vital program for all of San Antonio's children
- **Educational Impact:** Enhancing local kindergarten readiness by investing in critical foundational reading skills



Looking Forward

This report details our financial stewardship, operational achievements, and the generous support from donors and sponsors who share our vision. Every dollar invested in ILSA represents an investment in San Antonio's future—one book, one child, one brighter tomorrow at a time. We invite you to explore the pages that follow to see how your support has translated into tangible impact for our community's youngest learners. Together, we are building not just literacy, but hope, opportunity, and brighter futures for all.

With gratitude, **The Board of Directors** Imagination Library of San Antonio

*For questions about this report or our programs, please contact us at:
admin@imaginationlibrarysa.org*

Learn more about Dolly Parton's Imagination Library: imaginationlibrary.com/usa



ILSA

Chapter 2

Financial Report



2.1 Financial Overview (September 2024–May 2026)

2.1.1 Executive Summary

The Imagination Library of San Antonio (ILSA) is a 501(c)(3) nonprofit and Local Program Partner of Dolly Parton’s Imagination Library, mailing free books each month to children from birth to age five in San Antonio. This report summarizes financial activity over the 21 months of September 2024–May 2026.

During this period ILSA received \$196,543 in total income against \$12,664 in expenses. Accumulated reserves stood at \$183,879 at the close of the period.

- **Recurring giving** (online donations and subscriptions via PayPal and Bonterra): \$8,495 (4.3% of income), averaging \$405 per month.
- **Grants and major gifts** (deposited at the bank): \$188,047 (95.7% of income) across 11 deposits; the largest was \$110,000 in December 2025.
- **Program cost** (Imagination Library age-group, welcome, and graduation books plus per-piece mailing): \$16,863 invoiced, of which \$12,163 has been paid in cash and \$4,700 remains an outstanding payable to the Dollywood Foundation. Program cost averages \$2.38 per child served.

Recurring giving did not fully cover this cost, leaving an operating deficit of \$8,367 that was funded from grants and accumulated reserves. This is the central dynamic of ILSA’s finances: day-to-day donations do not yet cover the cost of the book program, so the organization relies on periodic grants and major gifts to build and sustain reserves.

The central financial dynamic

Recurring giving of \$8,495 covers only a fraction of the invoiced program cost of \$16,863: the program runs an operating deficit and is currently sustained by episodic grants and accumulated reserves of \$183,879.

2.1.2 Income

Recurring giving is the predictable, forecastable stream. Grants and major gifts are episodic by nature and are reported as discrete events rather than a trend.

2.1.3 Expenses

The program cost grows as enrollment increases, since ILSA pays per child served. It is the organization’s dominant and steadily rising expense.



Income Source	2024	2025	2026	Total
Recurring giving (PayPal + Bonterra)	\$1,502	\$5,878	\$1,116	\$8,495
Grants & major gifts (bank deposits)	\$25,200	\$143,168	\$19,679	\$188,047
Total income	\$26,702	\$149,046	\$20,795	\$196,543

Table 2.1: Income by source and calendar year (2024 and 2026 are partial; data spans September 2024–May 2026).

Expense Category	2024	2025	2026	Total
Program – Imagination Library	\$0	\$8,144	\$4,019	\$12,163
Other (fees, chargebacks)	\$1	\$0	\$500	\$501
Total expenses	\$1	\$8,144	\$4,519	\$12,664

Table 2.2: Operating expenses by calendar year, cash basis (Dollywood payments as cleared at the bank: 12 payments over September 2024–May 2026). The invoiced (accrual) program cost is reconciled below.

Program Cost: Invoiced vs. Paid

The Dollywood Foundation bills monthly for welcome, age-group, and graduation books plus per-piece mailing. The *invoiced* (accrual) amount is the cost incurred that month; cash payments clear about a month later, so cumulative invoiced minus paid is the outstanding payable. Reserves elsewhere in this report remain on the cash basis, so they continue to tie to actual money on hand.

Year	Invoiced (accrual)	Paid (cash)	Payable (cumulative)
2025	\$6,377	\$8,144	-\$1,767
2026	\$10,485	\$4,019	\$4,700
Total	\$16,863	\$12,163	\$4,700

Table 2.3: Program cost invoiced vs. paid, by calendar year. “Payable” is the cumulative invoiced-minus-paid balance owed to the Dollywood Foundation.

2.1.4 Cash Flow and Reserves

Closing reserves of \$183,879 are healthy, but it should be understood that the bulk of these reserves originates from one-time grants and major gifts rather than from recurring operations.



Cash Flow Component	2024	2025	2026	Full Period
Opening reserves	\$0	\$26,700	\$167,603	\$0
Total income	\$26,702	\$149,046	\$20,795	\$196,543
Total expenses	(\$1)	(\$8,144)	(\$4,519)	(\$12,664)
Net change	\$26,700	\$140,902	\$16,276	\$183,879
Closing reserves	\$26,700	\$167,603	\$183,879	\$183,879

Table 2.4: Consolidated cash flow by calendar year. Reserves are inception-to-date, so each year’s opening equals the prior year’s closing. Internal PayPal–bank transfers are netted out so donations are counted once.

Reserves are grant-funded, not operational

The \$183,879 in reserves originates almost entirely from one-time grants and major gifts (\$188,047, 95.7% of all income) — not from recurring operations, which contribute only 4.3% of income.

2.1.5 Outlook

Projections extend the period’s linear trend of recurring giving and program cost forward, holding grants at zero (new grants are not assumed). On that basis:

- Recurring-giving trend: -\$9 per month.
- Program-cost trend: \$132 per month.
- Projected reserves: \$151,174 by May 2027 and \$98,161 by May 2028.

Because grants are episodic and excluded from the projection, this is a deliberately conservative view: a single new grant or major gift materially improves the outlook. The practical implication is that sustaining and growing *recurring* giving is the key to long-term operating sustainability.

2.2 Budget and Forward Plan

2.2.1 Annual Operating Budget (August 2025 – July 2026)

The board adopted the following enrollment and program-cost budget for the fiscal year. Actual kids are the children served each month (age-group + welcome + graduation books mailed), and actual program cost is the invoiced (accrual) amount for that invoice month; months not yet invoiced are shown as “—”.



Month	Budget Kids	Actual Kids	Budget Inv.	Actual Inv.	Variance
Aug	370	273	\$900	\$635	\$265
Sep	425	324	\$1,000	\$783	\$217
Oct	490	379	\$1,200	\$904	\$296
Nov	560	407	\$1,350	\$1,011	\$339
Dec	650	693	\$1,580	\$1,712	-\$132
Jan	750	751	\$1,800	\$1,767	\$33
Feb	850	756	\$2,100	\$1,805	\$295
Mar	980	939	\$2,400	\$2,214	\$186
Apr	1,120	1,002	\$2,750	\$2,313	\$437
May	1,300	1,039	\$3,200	\$2,387	\$813
Jun	1,500	1,099	\$3,650	\$2,635	\$1,015
Jul	1,700	—	\$4,200	—	—
Total	—	—	\$26,130	\$18,166	

Table 2.5: Monthly enrollment and program-cost budget vs. actual, August 2025 – July 2026.

2.2.1.1 Operational and Marketing Costs

Item	Budgeted	Frequency	Notes
Mail Box	\$350	yearly	

Table 2.6: Budgeted operational and marketing costs.

2.2.2 Reserve Projection Scenarios (through December 2029)

Reserves are projected from the linear trend of recurring giving and program cost on past data (the baseline shown in the income-and-expense projection). The optimistic and pessimistic scenarios vary that baseline net cash flow by $\pm 15\%$ per year, widening the range over time. No new grants are assumed, so all three are conservative views.

Year-end	Pessimistic ($-15\%/yr$)	Baseline	Optimistic ($+15\%/yr$)
Dec 2026	\$166,424	\$167,269	\$168,190
Dec 2027	\$113,970	\$122,717	\$131,270
Dec 2028	\$26,295	\$57,858	\$85,494
Dec 2029	-\$105,589	-\$27,062	\$34,493

Table 2.7: Projected reserves at each year-end under the baseline and $\pm 15\%/yr$ scenarios.

Under the baseline, reserves decline from \$183,879 today to -\$27,062 by December 2029 (-\$105,589 pessimistic, \$34,493 optimistic). The decline is gradual



because recurring giving nearly offsets the current program cost; the gap widens only as the program grows. A single new grant or major gift – excluded here by design – would materially extend the runway.

Sustainability runway

On the conservative baseline (no new grants assumed), reserves fall from \$183,879 today to -\$27,062 by December 2029 (-\$105,589 to \$34,493 under the $\pm 15\%$ /yr scenarios). Growing *recurring* giving is the decisive lever on long-term operating sustainability.

2.2.3 Governance and Compliance

ILSA maintains its IRS 501(c)(3) tax-exempt status, complies with Texas nonprofit corporation requirements, and operates under the partnership guidelines of Dolly Parton’s Imagination Library. Financial activity is reviewed by the board, with segregation of duties across financial processes.

2.2.4 Figures

The figures that follow summarize the period. “Monthly Income and Expense Analysis” separates recurring operating activity (top) from episodic grants and major gifts (bottom), since the latter are large enough to obscure the former on a single scale. “Accumulated Reserves” traces the consolidated cash position over time, with grant events annotated. “Income and Expense Projections” extends the recurring-giving and program-cost trends forward, and “Projected Reserves” carries that same baseline trend to December 2029 with an optimistic/pessimistic band of $\pm 15\%$ per year. The final map, “San Antonio Areas Served by ILSA,” gives geographic context to the program’s reach.

Financial figures generated from ledger data by treasurer.py; see ILSA-commands.tex.

2.3 Enrollment Cohorts and Forward Commitments

Every enrolled child receives a book each month from birth through age five, so the children on the rolls today are a multi-year financial commitment. This section reads the invoice data as an age-structured population: each Imagination Library Group 1–6 is a one-year age cohort; children age up one group per year and

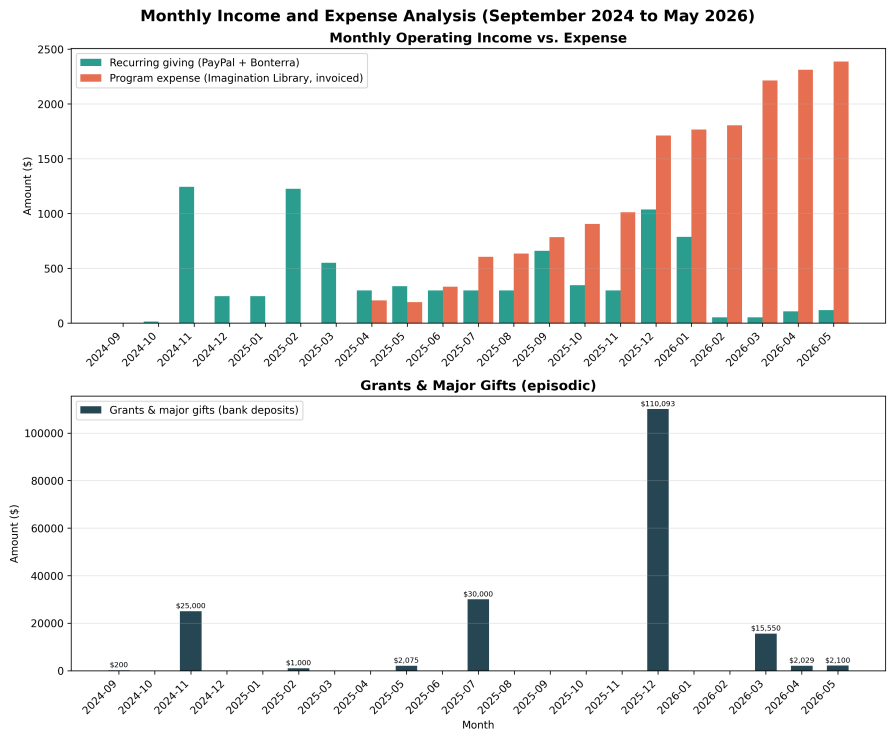


Figure 2.2-1: Monthly Income and Expense Analysis

graduate out after Group 6; new children enter through welcome books (invoice item code LETC) and graduations are billed as GRAD books. Tracking how these cohorts move through the system turns the current roster into a forecast of future cost. Throughout, program cost is the invoiced \$2.38 per child served (the accrual basis reconciled in the Expenses section).

2.3.1 Current Age Structure

As of June 2026, 1,000 children are enrolled across the six age groups (Figure 2.3-6). The pyramid is *inverted*: the youngest group (Group 1, infants) is the smallest, while Groups 2–5 each hold roughly two hundred children. This is the signature of a program still scaling up by enrolling older children, rather than one fed primarily by newborns.

The program has scaled rapidly — from a handful of children in early 2025 to over a thousand today — and the stacked history (Figure 2.3-7) shows how each age group has filled in as enrollment has grown.

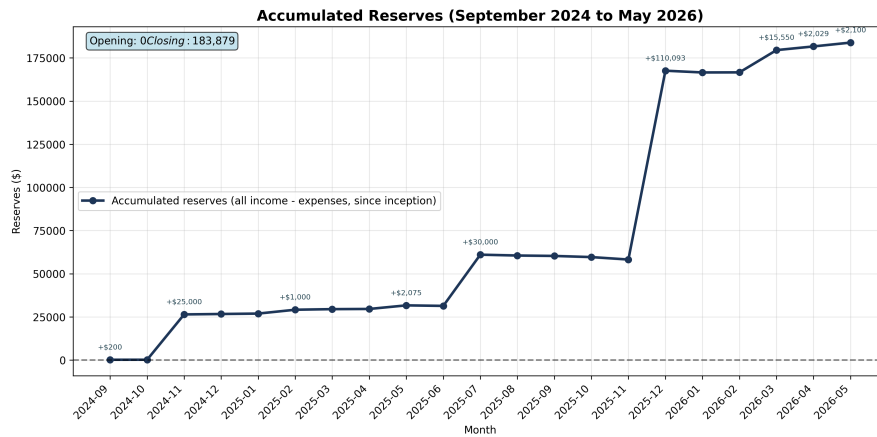


Figure 2.2-2: Accumulated Reserves

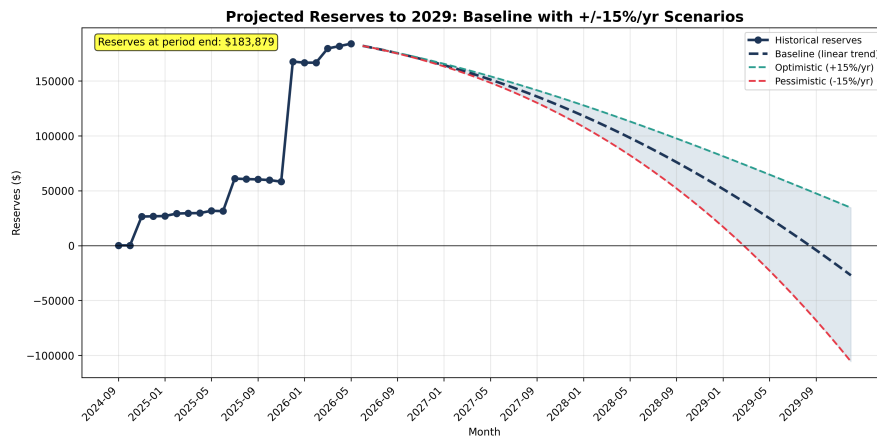


Figure 2.2-3: Projected Reserves to December 2029: Baseline (linear trend) with $\pm 15\%/yr$ Optimistic and Pessimistic Scenarios

2.3.2 Observed Enrollment Flows

The invoices now make the enrollment dynamics directly observable (Figure 2.3-8): welcome books (LETC) count new enrollments each month, and graduation books (GRAD) count exits. New enrollment averages about 82 children per month with a linear trend of +4.4 per month. Two enrollment campaigns (December 2025 and March 2026) drive the visible spikes and pull that linear trend upward, so the projection below should be read as an upper-leaning estimate of recruitment.

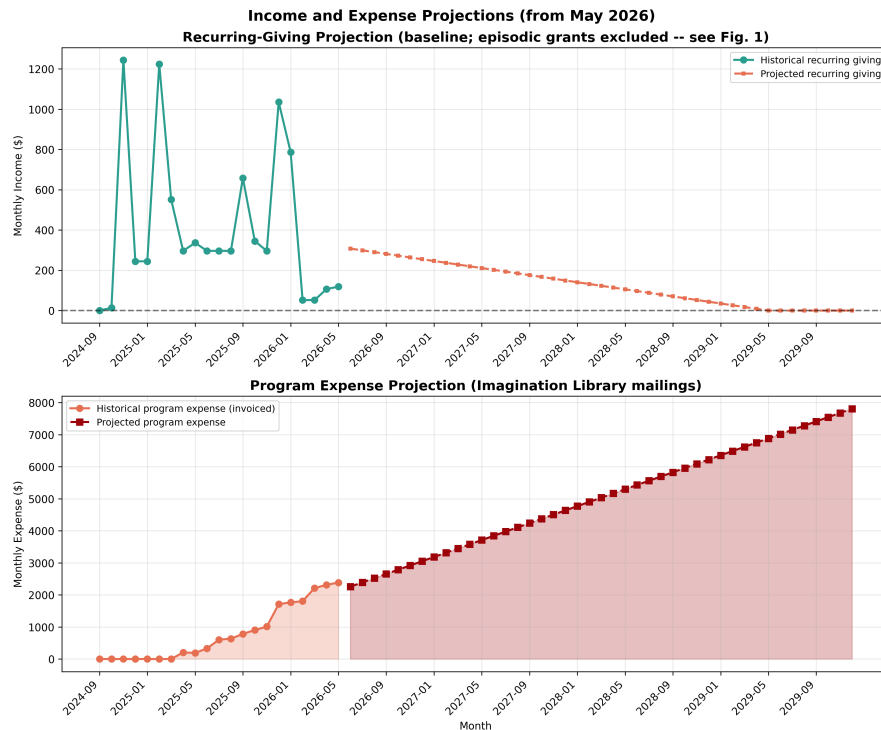


Figure 2.2-4: Income and Expense Projections

2.3.3 Locked-in Commitment

Locked-in commitment

Even if enrollment stopped today, the children already on the rolls obligate ILSA to \$95,949 of future books (40,308 book-months) as each cohort ages to graduation. This is the floor on program cost — it assumes no new enrollment and no attrition.

In headcount terms, the current cohort winds down from 1,000 children today to zero within six years as each group reaches graduation, with the oldest groups (Group 6) leaving first and today’s youngest children (Group 1) the last to graduate (Figure 2.3-9).

The same runoff in dollars (Figure 2.3-10) gives the annual committed cost and the cumulative remaining obligation.

2.3.4 Forward Projection to 2029

Carrying the observed recruitment trend forward, with graduation handled endogenously (children age out at sixty months of enrollment), program cost continues to climb (Figure 2.3-11). Because the age at which new children enter is not directly

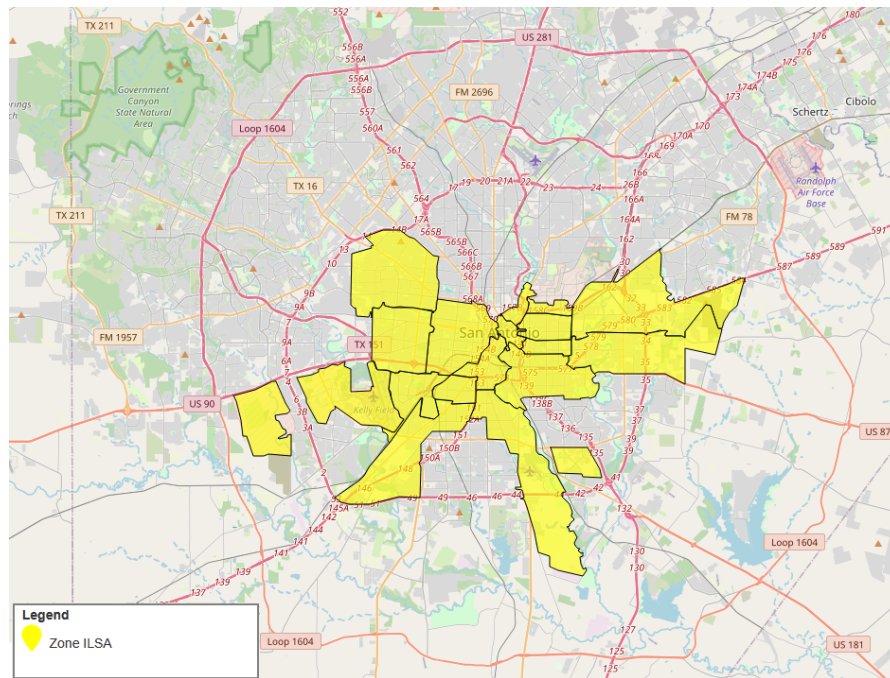


Figure 2.2-5: San Antonio Areas Served by ILSA

observed, two intake mixes bracket the outcome: *today's mix* (entrants skew older, as currently observed, so they graduate sooner) and *birth-fed* (a matured program enrolling mostly infants, who carry a full six-year tail). The two diverge in age composition at the horizon (Figure 2.3-12).

By 2029, enrollment reaches 7,174 children (today's mix) to 9,055 (birth-fed), a monthly program cost of \$17,078 to \$21,555, and a locked-in future commitment of \$419,178 to \$1,137,557. The intake mix is the dominant lever on the long-run liability.

The intake age is the dominant lever

By 2029, monthly program cost reaches \$17,078 to \$21,555. The age at which new children enroll drives the long-run liability: the locked-in commitment ranges from \$419,178 (older-skew intake, as currently observed) to \$1,137,557 (birth-fed, a matured program).

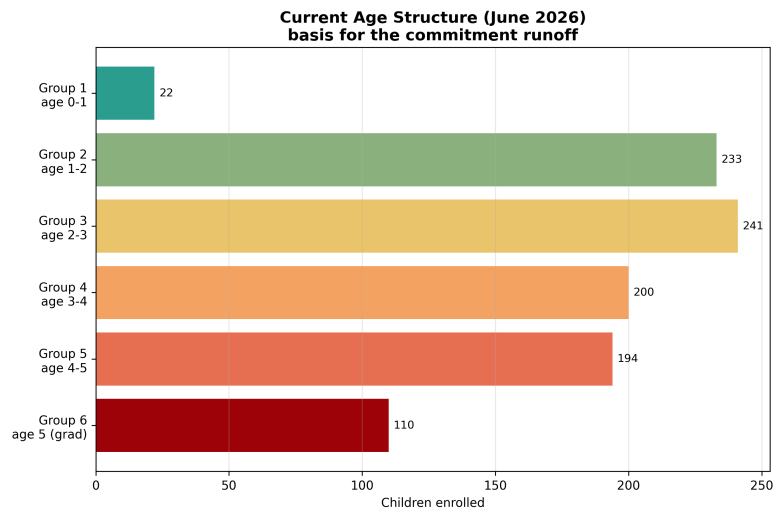


Figure 2.3-6: Current enrollment by age group (the population pyramid that seeds the forward model).

Year-end	Kids (today's)	Kids (birth-fed)	\$/mo (today's)	\$/mo (birth-fed)
Dec 2026	1,695	1,712	\$4,035	\$4,075
Dec 2027	3,357	3,567	\$7,992	\$8,491
Dec 2028	5,227	6,008	\$12,443	\$14,300
Dec 2029	7,174	9,055	\$17,078	\$21,555

Table 2.8: Year-end enrollment and monthly program cost under the two intake-mix scenarios ("today's" = current older-skew intake; "birth-fed" = matured program).

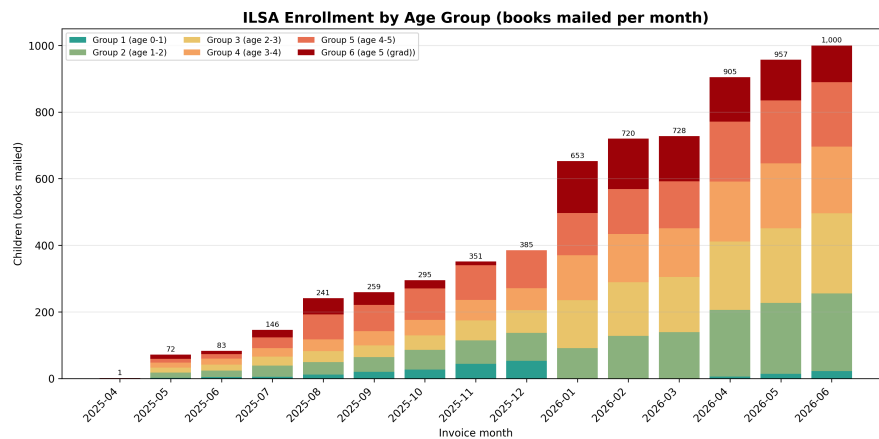


Figure 2.3-7: Monthly enrollment by age group since program launch, showing both total growth and the shifting age composition.

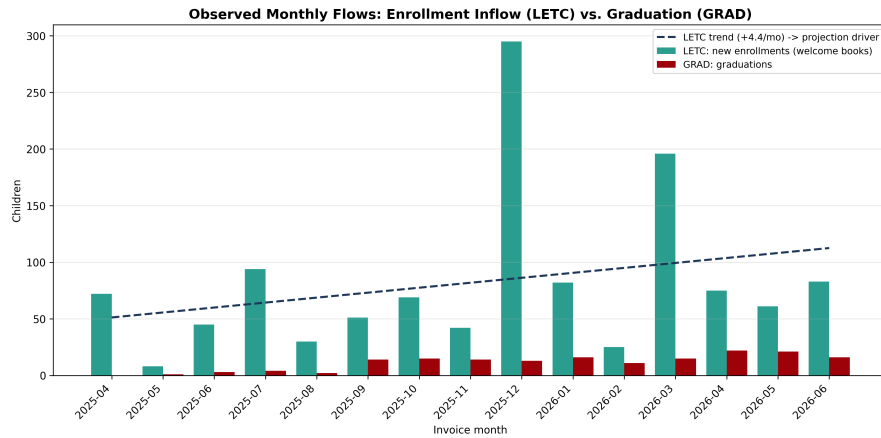


Figure 2.3-8: Observed monthly enrollment inflow (LETC) versus graduation outflow (GRAD), with the linear recruitment trend used in the projection.

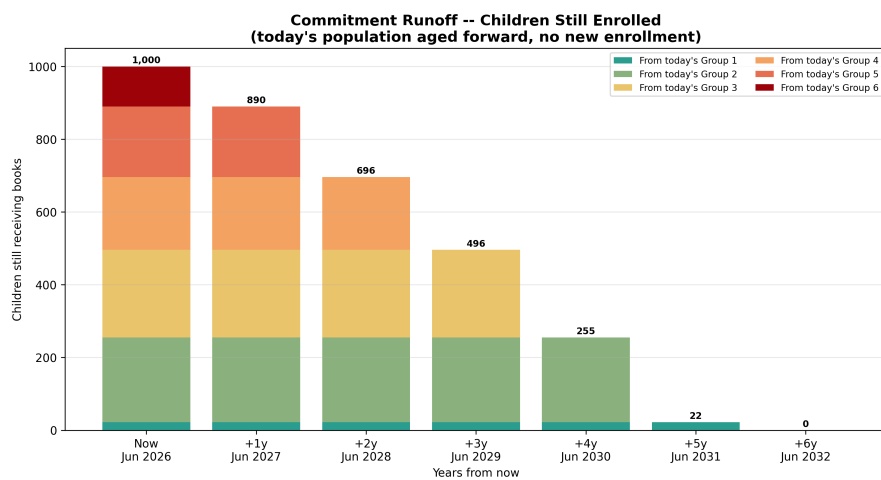


Figure 2.3-9: Commitment runoff in children: today's enrolled population aged forward with no new enrollment, stacked by the group each child is in today.

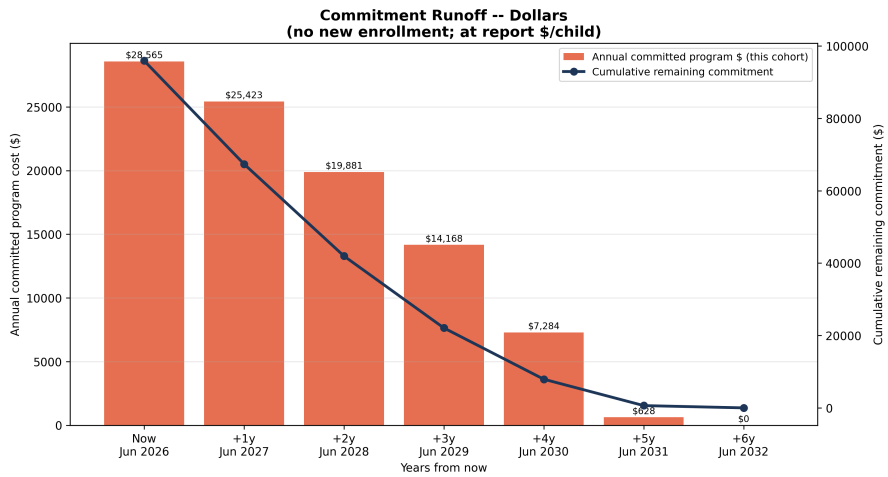


Figure 2.3-10: Commitment runoff for the current cohort with no new enrollment: annual committed cost and the cumulative remaining obligation.

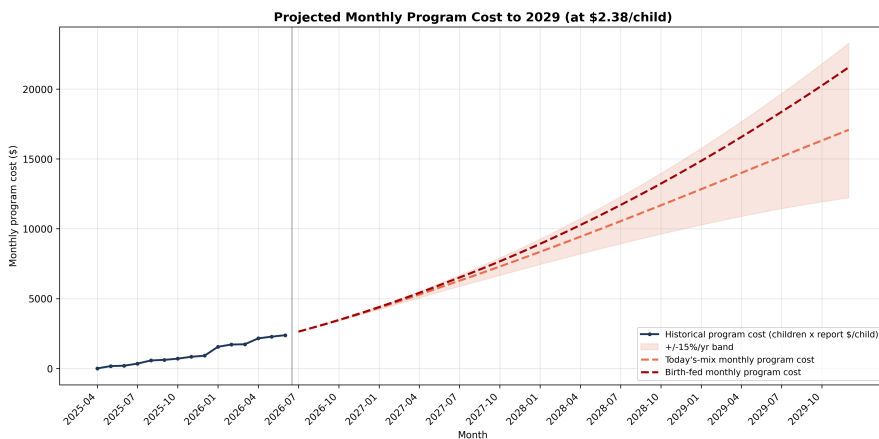


Figure 2.3-11: Projected monthly program cost to 2029 under observed-LETC recruitment, with a ±15%/yr band and the two intake-mix scenarios.

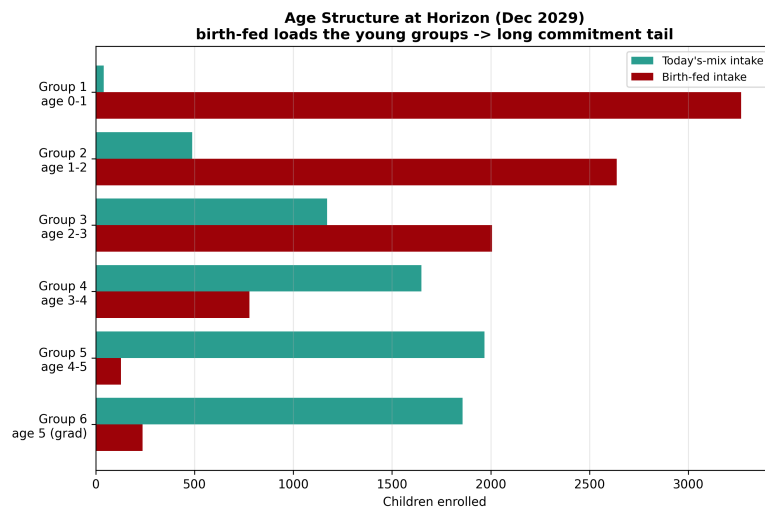


Figure 2.3-12: Age structure at 2029 under each intake mix: birth-fed loads the young groups, producing a much larger long-run commitment tail.



Appendix A

Methodology

This appendix documents the data sources, the consolidation and classification model, the statistical estimators, and the forward population model behind every figure in this report. The toolchain treats the report not as a document that is typed, but as a *reproducible artifact built deterministically from primary financial records*. The same inputs regenerate byte-comparable outputs on every run, and no number in the narrative is entered by hand: each is computed by code from the consolidated ledger or the original invoices and injected into the prose as a \LaTeX macro. An auditor can therefore trace any figure backward — narrative \rightarrow generated macro \rightarrow generating function \rightarrow ledger or invoice row \rightarrow original bank, PayPal, or DPIL record.

A.1 Design principles

Three principles govern the design.

- **Transparency.** All analysis reads one consolidated ledger (`ILSA_full_ledger.xlsx`) and the original Dollywood invoice PDFs. Transaction categorization lives in readable code, not in private spreadsheet judgment, so any reviewer can inspect and challenge the rules. Internal PayPal \leftrightarrow bank sweeps are detected and netted out so each gift is counted once.
- **Rigor.** Income is split into *recurring* giving (forecastable) and *episodic* grants and major gifts (shown discretely, never trended). Program cost is reported on an *accrual* basis (the invoiced amount) and reconciled to *cash* (bank payments). Every forward assumption is a named constant, and the projections carry an explicit $\pm 15\%$ /year uncertainty band.



- **Reproducibility.** A single shared model feeds the report, the figures, the tables, and the planning workbook, so they are mathematically incapable of disagreeing. The pipeline is parameterized by reporting period and is replayable end to end.

A.2 Repository organization and build pipeline

The project separates *primary records*, a *shared model*, and three *deliverables*. The shared library is never run directly; both the report and the workbook import it, which is what guarantees they reconcile.

Component	Role
ILSA_full_ledger.xlsx	Single source of truth: bank (TCB) and PayPal exports, hand-merged.
invoices/*.pdf	Primary-source Dollywood invoices.
parse_invoices.py	Parses each invoice PDF into invoices/summary.csv.
ilsa_ledger.py	Shared model. Loads and consolidates the ledger, nets internal transfers, builds the monthly table, the invoice (accrual) model, and the projection.
treasurer.py	Builds the report: figures, CSV summaries, and ILSA-commands.tex.
cohort_explore.py	Age-structured cohort model; generates the Section 2.3 figures and macros.
running_budget.py	Builds the planning workbook ILSA_running_budget.xlsx.

Table A.1: Repository components and their roles.

Data flow. Raw exports are merged into the consolidated ledger and invoices are parsed into `summary.csv`. The shared library consolidates both into the monthly model. `treasurer.py` emits the figures and a file of `\newcommand` definitions (`ILSA-commands.tex`); the prose files (`FiscalReport.tex`, `2Report.tex`) reference only those macros, so the wording stays editable while the numbers stay generated. The document is compiled twice with `pdflatex` so the `lastpage` total page count resolves.

A.3 Data sources and consolidation

Each ledger row is normalized to a common schema: posting *date*, *source* (TCB or PayPal), *description*, *category*, signed *amount* (net of fees), and *gross* (pre-fee).



Bank amounts are signed by their credit/debit flag; PayPal amounts use the **Net** field (fees included) with **Gross** retained for donor-intent reporting. Rows are sorted by date and stamped with a monthly period.

Invoices are parsed line by line. Each monthly invoice lists, per age group (Group 1–6) and language, the book quantity and dollar amount, plus three non-group items: welcome books (LETC), graduation books (GRAD), and a per-piece mailing charge. The parser is robust to two invoice layouts, recovers the printed total where present (falling back to the sum of line items), and *de-duplicates* re-exported invoices by their DPIL invoice number — keeping the most complete copy — so a re-export can never double-count. Promotional invoices (e.g. lapel pins) are detected and excluded from program totals.

A.4 Transaction classification

Categorization is rule-based and auditable. Bank descriptions map to categories by keyword: DOLLYWOOD → program cost; BONTERRA → recurring giving; DDA/DEPOSIT → grant or major gift; FEE/SERVICE CHARGE → bank fee; CHARGEBACK → income reversal; PAYPAL/INST XFER → internal transfer. PayPal rows are recurring giving unless they are withdrawals, bank-funded deposits, or the pending bank-link wash, which are internal. Internal transfers are excluded from both income and expense, so a donation swept from PayPal to the bank is counted once (when received), never again when the funds move.

A.5 The invoice line-item model and enrollment conservation

Reading the invoices as an age-structured population requires understanding how a child appears on a given month's invoice. Empirically, the three recipient sets are *disjoint*: a continuing child receives a group book, a newly enrolled child receives only a welcome book that month (entering an age group the following month), and a graduating child receives a graduation book as they exit. Consequently the mailing quantity equals the children served,

$$\text{kids}(M) = \underbrace{\sum_g G_g(M)}_{\text{group books}} + \text{LETC}(M) + \text{GRAD}(M) = \text{mailing pieces}(M), \tag{A.1}$$



and the group roll obeys a one-month conservation law,

$$\sum_g G_g(M) = \sum_g G_g(M-1) + \text{LETC}(M-1) - \text{GRAD}(M). \quad (\text{A.2})$$

Equation (A.2) holds across the observed period with residuals of a few children per month, which both validates the enrollment rule and confirms that LETC is a clean measure of monthly inflow and GRAD of outflow.

A.6 Cash versus accrual program cost

The Dollywood Foundation *invoices* a month's books (the cost incurred, *accrual*); the bank *payment* clears about a month later (*cash*). Empirically the invoiced amount for month M matches the bank payment recorded in month $M+1$. The report therefore states program cost on the accrual basis, with cash retained for the reserve position so reserves still tie to money on hand; the cumulative difference is the outstanding payable, \$4,700. The effective per-child program cost is the ratio of invoiced cost to children served over billed months,

$$c = \frac{\sum_M \text{accrual}(M)}{\sum_M \text{kids}(M)} \approx \$2.38 \text{ per child served}, \quad (\text{A.3})$$

which blends the age-group books, welcome and graduation books, and per-piece mailing.

A.7 Trend estimation by ordinary least squares

Forecastable series are extrapolated with a first-degree ordinary least-squares (OLS) fit on the sequential month index. For observations $\{(t_i, y_i)\}_{i=0}^{n-1}$ with $t_i = i$, the line $\hat{y} = \beta_0 + \beta_1 t$ minimizes the residual sum of squares $\sum_i (y_i - \beta_0 - \beta_1 t_i)^2$, giving the closed form

$$\beta_1 = \frac{\sum_i (t_i - \bar{t})(y_i - \bar{y})}{\sum_i (t_i - \bar{t})^2}, \quad \beta_0 = \bar{y} - \beta_1 \bar{t}. \quad (\text{A.4})$$

Forward values are clamped to be non-negative, $\hat{y}_t = \max(\beta_0 + \beta_1 t, 0)$. This estimator is applied to three monthly series: recurring giving (slope -\$9/month), invoiced program cost (slope \$132/month), and the enrollment inflow LETC (slope +4.4/month). Because LETC contains two campaign-driven spikes, its linear slope is upward-biased relative to the non-campaign baseline; the corresponding projection is read as upper-leaning, and the $\pm 15\%$ /year band brackets the uncertainty.

A.8 Reserve projection and scenario bands

Let R_0 be the current cash reserve and \hat{I}_k, \hat{E}_k the OLS extrapolations of recurring income and program cost for future month k . The baseline reserve path accumulates projected net cash flow,

$$R_k = R_0 + \sum_{j=1}^k (\hat{I}_j - \hat{E}_j). \quad (\text{A.5})$$

The optimistic and pessimistic scenarios scale each month's net flow by a factor that compounds with elapsed years $\tau_k = k/12$,

$$R_k^\pm = R_0 + \sum_{j=1}^k (\hat{I}_j - \hat{E}_j) (1 \pm \beta)^{\tau_j}, \quad \beta = 15\%, \quad (\text{A.6})$$

where the pessimistic case uses $(1 + \beta)$ (a widening deficit) and the optimistic case $(1 - \beta)$. No new grants are assumed, so all three paths are deliberately conservative. The horizon runs to December 2029; under the baseline, reserves reach -\$27,062 at the horizon.

A.9 The age-structured cohort model

The forward enrollment and commitment figures come from a discrete-time, age-structured population model — a Leslie progression matrix without fecundity, driven by an exogenous recruitment term. Enrollment is tracked in monthly age-of-enrollment classes $a \in \{0, 1, \dots, 71\}$ (six annual groups \times twelve months); let $\mathbf{n}(t) \in \mathbb{R}^{72}$ be the population vector, with group g occupying classes $[12(g - 1), 12g)$. The model is seeded from the latest group pyramid, distributed uniformly within each group, $n_a(0) = G_g/12$ for a in group g .

Each month every child ages one class, the oldest class graduates out, and new children are recruited according to an intake distribution \mathbf{w} (with $\sum_a w_a = 1$):

$$\mathbf{n}(t+1) = \mathbf{A} \mathbf{n}(t) + R(t) \mathbf{w}, \quad \mathbf{A} = \begin{pmatrix} 0 & 0 & \cdots & 0 & 0 \\ 1 & 0 & \cdots & 0 & 0 \\ 0 & 1 & \cdots & 0 & 0 \\ \vdots & & \ddots & & \vdots \\ 0 & 0 & \cdots & 1 & 0 \end{pmatrix}, \quad (\text{A.7})$$

where the sub-diagonal shift matrix \mathbf{A} advances each class and discards class 71 (graduation). The number graduating in month t is $n_{71}(t)$; total enrollment is $N(t) = \sum_a n_a(t)$ and monthly program cost is $c N(t)$.



Recruitment. $R(t)$ is the OLS extrapolation of the observed LETC inflow (clamped at zero), optionally scaled by the $(1 \pm \beta)^\tau$ band. Graduation is endogenous — it emerges from aging Equation (A.7), not from a separate assumption.

Intake age. The *age* at which new children enter is not directly observed, so two intake distributions bracket it. The *today's-mix* scenario spreads recruits across classes in proportion to the current pyramid, $w_a = p_g/12$ for a in group g (where p_g is the current stock share of group g); the *birth-fed* scenario routes all recruits to birth, $\mathbf{w} = \mathbf{e}_0$. Because the current pyramid is inverted (older-skewed), today's mix graduates sooner and birth-fed carries a full six-year tail; the two bracket the long-run liability.

Commitment runoff. Setting $R \equiv 0$ runs the existing population off to graduation and measures the locked-in obligation. A child in class a owes $72 - a$ further monthly books, so the remaining commitment is

$$\text{Commitment} = c \sum_{a=0}^{71} (72 - a) n_a, \quad (\text{A.8})$$

which evaluates to \$95,949 for the current roster — the floor on future program cost, assuming no new enrollment and no attrition.

A.10 Reproducibility and limitations

The pipeline is deterministic and parameterized by reporting period and projection horizon; re-running the scripts and compiling twice reproduces the report exactly. Sources are plain-text and diffable. The principal limitations are stated honestly: linear extrapolation is sensitive to the two enrollment campaigns in the LETC series; the intake age is unobserved (hence the two-scenario band); attrition and voluntary disenrollment are not modeled; the recurring-giving trend is sensitive to a small number of large early gifts; and the cash/accrual payable reflects payment timing rather than any discrepancy in the underlying records.