

Choice Under Constraint: Enterprise-Fund Transfers and Divergent Fiscal Trajectories Among Virginia's Independent Cities

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Abstract

Among structurally similar Virginia independent cities, the evidence is consistent with the proposition that a sustained discretionary interfund transfer, alongside shared structural pressure, materially reduced one city's fiscal margin of safety. Radford's total net position fell 35 percent over FY2015–FY2024 while three peer cities grew theirs 40 to 67 percent. Radford moved municipal electric-utility margin into its general fund at 18.5 percent of operating revenue, against a zero-to-seven percent observed peer range, drawing a cumulative \$52.04 million from FY2011 through FY2024; a closely matched comparison city running a broadly similar utility at a similar scale, but transferring nothing, stayed solvent. Audited proprietary-fund statements show Radford's electric-fund working capital falling from \$9.9 million in FY2015 to negative \$2.3 million in FY2024 as the transfers persisted. Using a nested comparative-case design built entirely from audited financial reports, the paper treats the transfer as a recurring budget mechanism and a material, temporally prior contributor to that deterioration, consistent with fiscal illusion. It offers a transfer-to-operating-revenue ratio as a candidate monitoring screen that aggregate distress measures can miss.

Keywords: fiscal distress, interfund transfers, enterprise funds, fiscal illusion, municipal electric utilities, public budgeting, local government finance

Introduction

Two small Virginia cities ninety miles apart run the same unusual business at almost the same size under the same market pressure. Both own a municipal electric utility, buy nearly all their power wholesale, and resell it to residents. In the fiscal year that ended June 30, 2024, their electric systems were within \$30,000 of each other in operating revenue, and each spent 80.8 cents of every revenue dollar on purchased power. One of them, Radford, has been found by the Virginia Auditor of Public Accounts to meet the Commonwealth's criteria for fiscal distress and was formally recommended for state assistance. The other, Martinsville, has not. The structural pressure both cities feel is real and shared. It is not where they diverge.

They diverge on one operational lever, and that lever is an accounting entry. In FY2024 Radford moved \$3,974,796 out of its electric utility and into its general fund, about 18.5 percent of the utility's operating revenue. Martinsville moved nothing. Run that single difference across more than a decade and it is the largest discretionary contrast between the two: from FY2011 through FY2024 Radford drew \$52.04 million out of its electric fund to support the rest of city government, while Martinsville left its utility's margin in the utility. The matched-pair comparison below details the resulting balance sheets. The short version is that Radford ended the window with a negative utility net position and a general-fund deficit, and Martinsville with a reserve in both.

The dominant scholarly account of municipal fiscal distress is structural. Cities fail because their economic base erodes, their tax capacity falls below their expenditure needs, and exogenous

shocks exceed their reserves (Ladd & Yinger, 1989). Radford fits that account on its face. It lost a foundry, it carries a tax base in which roughly 45 percent of real property by assessed value sits off the rolls between a university, hospitals, churches, and government land, and it absorbed a wholesale-power shock that pushed purchased power from the low 60s to 80.8 percent of utility revenue in two years. A reader handed only those facts would conclude that structure explained the outcome.

This paper argues that the structural account, while accurate, is incomplete, and that it underweights a discretionary lever recorded in plain sight on the proprietary-fund statements. The structural pressures Radford faced were shared by cities that did not become distressed. One consequential and policy-controllable difference was Radford's decision, repeated every budget year, to convert utility margin into an operating subsidy through an interfund transfer. The contribution is twofold. The first is to the attribution problem in the fiscal-distress literature: among structurally similar cities, a specific governance choice, alongside structural pressure, materially shaped which city deteriorated, shown with a closely matched comparison case that prior cross-sectional work could not supply. The earlier literature on utility-to-general-fund transfers established the marginal case, that a hidden subsidy nudges expenditure upward (DiLorenzo, 1982; Strauss & Wertz, 1976). This case follows the lever to its endpoint: run for years without a brake, it coincides with a utility's slide from a healthy reserve to a negative reported net position and with the locality meeting the state's fiscal-distress criteria. Cross-sections showed the subsidy raises spending; this study adds an unusual structured comparison of a transferring and a non-transferring municipal-electric city, observed over fourteen audited years as the transferring fund's reported net position slid to a deficit. The second contribution is for financial reporting and oversight practice. The lever that separates the cases is a single

audited ratio, the enterprise-fund transfer as a share of utility operating revenue, and the paper argues that it may warrant consideration as a supplementary screen in early-warning systems, where structural indicators alone would have misread Radford. The claim is defended with a nested comparison that aligns much of the structure and focuses the comparison on the policy lever against the unmatched conditions named in the design, and it is bounded against a fiscal-illusion reading of why the choice was made and renewed.

Literature and theoretical framing

Three literatures bear on the argument, and each does its work at a different point in the paper rather than in a single front-loaded review.

The first concerns the causation of local fiscal distress, and specifically the tension between structural and managerial explanations. The structural tradition treats fiscal health as a function of the gap between a jurisdiction's revenue-raising capacity and its expenditure needs, both largely set by economic and demographic conditions outside the immediate control of officials (Ladd & Yinger, 1989). A parallel body of work develops composite early-warning models that predict distress from balance-sheet and operating indicators (Kloha et al., 2005; Trussel & Patrick, 2009), refines those measures across larger panels (Gorina et al., 2018), and examines how officials perceive stress relative to the indicators (Leiser et al., 2021). Running alongside the structural account is a managerial one, which holds that fiscal outcomes also turn on the choices officials make within their structural constraints, and that two jurisdictions facing similar conditions can diverge on the strength of those choices (Hendrick, 2004; Honadle, 2003). This paper enters that debate at its framing and again at its conclusion. The Radford case is an instance in which structure and choice can be partly separated empirically, because a closely

matched comparison city aligns on several utility-relevant structural features while differing on the choice.

The structural tradition is the natural baseline. Ladd and Yinger (1989) model fiscal health as the gap between revenue-raising capacity and expenditure need, both set largely by economic structure, demographics, and state-determined fiscal institutions rather than by the discretion of any council. On that account a small, post-industrial, exempt-heavy city is expected to struggle, and the implied remedy is structural. The early-warning literature operationalizes the same logic with measurable indicators: Kloha et al. (2005) build a ten-point scale from balance-sheet and operating signals, and Trussel and Patrick (2009) find that the probability of distress rises with revenue concentration and debt and falls with administrative slack and accumulated resources. Both frameworks would have flagged Radford. Neither would have explained why a near-twin escaped under the same conditions. The managerial strand supplies that half. Hendrick (2004) treats fiscal health as multidimensional and partly a product of management practice rather than economic fate, and Honadle (2003) catalogs the roles states play in predicting and averting local crises, a typology that presupposes such crises are not purely structural inevitabilities. The debate is usually hard to resolve empirically, because structure and management move together and a researcher rarely observes two jurisdictions alike on the first and divergent on the second. Radford and its closely matched comparison case approximate that rare observation.

The second literature concerns interfund transfers and the subsidization of general government from enterprise funds, and it is the accounting heart of the case. Municipal enterprise funds, including electric, water, and sewer utilities, are reported separately under proprietary-fund accounting precisely because they are meant to be self-supporting through user charges. A recurring practice, documented in the public-finance and budgeting literature and addressed

directly in practitioner guidance, is the transfer of enterprise-fund surpluses into the general fund, where they function as a revenue source that escapes the visibility of a tax (Bland, 2005; Government Finance Officers Association, n.d.). The literature treats large or persistent transfers of this kind as a governance risk, because they can mask the true cost of general services and erode the utility's capital position. An empirical lineage documents the practice: municipal utility profits substitute for own-source taxes (Colberg, 1955; Strauss & Wertz, 1976), and the resulting subsidy is associated with higher local expenditure in a pattern its authors read as fiscal illusion (DiLorenzo, 1982). Studying 267 municipally owned water utilities in California, Pierce et al. (2022) find little substantial interfund transfer in either direction and read enterprise-fund controls as generally effective, which frames a sustained, large transfer as a deviation from the disciplined norm rather than the rule. Public-sector accounting research treats these transfers as a budget-management mechanism rather than a neutral accounting movement; Felix (2015) finds that municipalities may use interfund transfers to manage the general fund's reported bottom line. The relevant question here is not simply whether Radford moved resources across funds, but whether repeated budgetary reliance on the electric fund substituted for visible general-revenue choices and drew down the utility's retained capacity. This literature enters at the mechanism section. Radford's transfer is an unusually clean empirical case of a phenomenon the literature has theorized and measured cross-sectionally, but rarely observes at this scale with a closely matched comparison case alongside it.

These transfers draw scrutiny because they sever the link between the benefit a resident receives and the price the resident pays. A utility bill is priced as a charge for power. When a portion of that charge is routed to the general fund, it functions as a general-revenue source embedded in a utility charge, an arrangement that can obscure the link between the rate a resident pays and the

general government it helps fund. Colberg (1955) identified the same disconnect seventy years ago, and it is why practitioner guidance treats the transfer as a governance question rather than a routine accounting entry. The Government Finance Officers Association (n.d.) advises that any recurring claim on an enterprise fund's resources be measured against an explicit working-capital target, so the transfer does not quietly decapitalize the utility, and Bland (2005) frames user charges and their diversion as a deliberate revenue-policy choice with distributional consequences. What the prior empirical work could not supply, and what the Radford case offers, is a closely matched comparison. DiLorenzo (1982) and Strauss and Wertz (1976) both infer the effect from differences across many cities at a single point in time. The Radford–Martinsville comparison aligns the utility model, the scale, and the cost structure closely and tracks the divergence across fourteen audited years.

The third literature is fiscal illusion: the proposition that the structure of public finance can systematically cause citizens to misperceive the cost of government, typically by making the burden less visible than it is (Puviani, 1903; Buchanan, 1967; Wagner, 1976; Oates, 1988; Dollery & Worthington, 1996). A utility-to-general-fund transfer fits the canonical form of the mechanism. It funds general services without a separately identified tax line or a vote framed as a tax increase, an arrangement that can make the cost of general government less transparent than a labeled tax, whatever any individual resident perceives. This literature enters at the inference about motive in the discussion. Dollery and Worthington (1996) sort the phenomenon into recognizable hypotheses, among them revenue complexity, in which a fragmented revenue structure obscures the total burden. The utility transfer belongs to that family, and it is an unusually pure instance: the cost of general government is embedded in a monthly charge residents read as the price of electricity, so the fragmentation runs not merely between revenue

instruments but between the apparent purpose of a payment and its actual destination. Wagner (1976) argued that the more complex and indirect a jurisdiction's revenue structure, the larger the government it can sustain without provoking taxpayer resistance. That is the prediction the Radford record tests.

Research design and data

The study uses a nested comparative-case design with three layers, each carrying a different part of the argument. It follows the logic of structured, focused comparison, which relies on a closely matched pair where a large sample would use statistical control, without claiming the two are equivalent (Przeworski & Teune, 1970; Lijphart, 1971). The Radford–Martinsville comparison is a most-similar-systems pairing: two cases aligned on several structural variables theory says should drive the outcome and differing on the one variable under test (Seawright & Gerring, 2008). Given the unmatched conditions acknowledged below, it functions as a plausibility probe and a theory-testing case selected for analytic leverage rather than as a quasi-experimental control (George & Bennett, 2005; Gerring, 2007). The cohort and the peer field address the limits of a single pair: the cohort supplies between-case variation holding city type and university anchor constant, and the peer field places Radford's transfer in a distribution rather than against one neighbor.

The design carries the limits inherent to small-N work. It cannot estimate an average treatment effect or attach a standard error to the divergence. It also cannot observe a clean pre-transfer Radford, because the transfer predates the audited window; the argument therefore rests on the cross-case contrast and the within-case sequence rather than on a common-pretrend assumption. What the design offers in exchange is a mechanism that large-sample studies of dissimilar cities cannot isolate as cleanly. The cross-case comparison is paired with within-case process tracing.

Radford is observed across fourteen audited years, and the causal claim rests not only on the contrast with Martinsville but on the order in which events occur inside Radford: the transfer, the reserve drawdown, the first audit findings, and the collapse of the utility's net position. Process tracing of this kind is the standard way small-N work shows that a proposed cause precedes and plausibly produces its effect (George & Bennett, 2005). It also blunts the objection that the cases were selected on the outcome. Radford is candidly an outcome-positive case, chosen because it is the distressed outlier. The design mitigates that hazard by matching Martinsville on structural inputs rather than fiscal results, and by resting the causal warrant on the order of events inside Radford rather than on the contrast with a city chosen for being solvent.

The first layer is a four-city cohort: Charlottesville, Harrisonburg, Williamsburg, and Radford. All four are Virginia independent cities, outside any county, each anchored by a major public four-year university. Independent-city status matters for comparability, because an independent city's audited financial report captures the full local-government footprint, including schools, social services, courts, jail, public safety, public works, utilities, and planning. Holding city type and university anchor constant, the cohort establishes that Radford is the outlier on net position, unrestricted position, and general-fund balance, and that its trajectory is not what the shared structural profile predicts.

The second layer is the Radford–Martinsville comparison, the analytic core. Martinsville is treated as a high-leverage comparison case rather than a matched control. It was selected by a stated, retrospective procedure: beginning from the set of Virginia independent cities that own a wholesale-dependent municipal electric utility, the candidates were ranked on three structural criteria — electric-fund operating scale, purchased-power burden, and a post-industrial economic profile — and Martinsville was the nearest available match on all three, selected on those inputs

rather than on its transfer practice. The correspondence on the dimensions central to municipal-electric finances is close. In FY2024 the two electric funds were within \$30,000 of each other in operating revenue, purchased power consumed 80.8 percent of operating revenue in each, and both are small post-industrial independent cities that buy nearly all their power wholesale and resell it at retail. The cities differ, however, on other potentially relevant fiscal, institutional, and demographic conditions, including taxable assessed value, exempt-property share, income, school obligations, pension and OPEB exposure, and pre-existing utility equity. The comparison therefore does not identify a treatment effect or hold all structural conditions constant. It aligns the cases closely on utility structure and scale, varies the transfer policy, and asks whether the observed sequencing and financial patterns are consistent with that policy having materially weakened Radford's fiscal capacity. Radford ran the transfer; Martinsville did not, and the outcomes diverged. The full candidate field, with each city's electric operating scale, purchased-power burden, operating income, and transfer practice, is reported in Table A1; Martinsville is the nearest available match on operating scale, wholesale burden, and post-industrial profile, while Salem matches the wholesale burden at roughly twice the scale and the remaining cities differ on size, structure, or transfer type.

The third layer is a six-city peer field of Virginia municipal-electric cities that places the matched-pair comparison in a wider descriptive context. Radford's transfer, expressed as a share of utility operating revenue, is set against the transfers run by Salem, Harrisonburg, Franklin, Manassas, and Martinsville. The peer field shows that Radford's transfer is not merely higher than one matched city's but is an outlier against the entire field, which clusters between zero and about seven percent.

The interpretive weight rests on the Radford–Martinsville comparison and the within-case sequence; the cohort and the peer field corroborate rather than carry it. The comparison shows that the most visible variable separating Radford from a closely matched city is the transfer, and the timing inside Radford shows the transfer preceded the decline. The cohort establishes that Radford is the outlier its structural profile does not predict, and the peer field shows the transfer is abnormal across the model. Together these layers support a single comparative argument rather than three independent tests.

The data are entirely primary and reproducible. Every quantitative series is built from the cities' audited Annual Comprehensive Financial Reports, cross-validated where possible against the Virginia Auditor of Public Accounts Comparative Report, and documented to the source-row level in a companion workbook. Three scope decisions shape the comparisons. First, the cohort comparison uses independent cities only, because comparing an independent city to a town would require a scope correction this analysis does not undertake; the two do not deliver the same bundle of services. Second, the net-position series must be read against two accounting-standard transitions. GASB Statement 68 pulled net pension liabilities onto the books beginning in FY2015, and GASB Statement 75 did the same for retiree health benefits beginning in FY2018. Both step net position down without any operating loss behind them. The electric-fund net-position series is therefore tagged by basis: pre-GASB68 for FY2011–FY2014, GASB68 for FY2015–FY2017, and GASB68-plus-75 from FY2018 forward. The restatements touch net position only; operating revenue, purchased power, the transfers, and the \$52.04 million cumulative draw are unaffected. The Electric Fund's share of the FY2015 GASB 68 restatement was approximately \$1.2 million, and the FY2018 GASB 75 adoption further reduced beginning net position by an OPEB amount the fund-level statements do not separately quantify; these are

accounting-basis changes rather than operating losses, and Table II marks the years they take effect. Third, one Radford audit required recovery. The FY2014 Annual Comprehensive Financial Report was missing from the city's public archive for eleven years and was located in 2026 (Archive document 469, posted May 28, 2026). Its financial-statement pages were re-scanned and verified against the accounting identity and the FY2013 net-position tie. The cumulative transfer figure of \$52.04 million includes the recovered FY2014 draw of \$4,187,862; earlier internal figures of roughly \$47.8 million reflect the same series with FY2014 left blank, and are superseded.

A convention from the source record governs the whole manuscript: description and inference are kept distinct. The numbers, the sequence, and the audit record are description. Claims about why the council chose and renewed the transfer are inference, and the text marks them with hedged language rather than asserting motive as fact.

Cohort context: Radford is the outlier

The four cohort cities differ in size and in the universities they host, and they moved in different directions over FY2015–FY2024. On the measure that matters most for solvency, they did not move together.

[Insert Figure 1 about here]

Figure 1. Primary-government total net position, indexed to each city's first audited year in the window (FY2015; Charlottesville and Williamsburg FY2016, their earliest available) = 100, through FY2024. Source: author's calculations from audited Annual Comprehensive Financial Reports; values are nominal. Total net position is a broad balance-sheet indicator, not a measure of liquidity.

Three cities grew their total net position over their available windows: Charlottesville by about 67 percent, Harrisonburg by 63 percent, and Williamsburg by 40 percent. Radford fell 35

percent. It is the only cohort city with a deteriorating net position across the window, and the gap is not marginal.

The unrestricted governmental net position tells the same story earlier and more sharply, which is why it is the better early-warning measure. Radford's was negative in every year of the window and deepened from roughly negative \$0.5 million in FY2015 to negative \$10.9 million in FY2024. Harrisonburg's climbed from \$15.8 million to \$83.2 million over the same period. Radford's audited FY2024 total general-fund balance was negative \$1.94 million, the first negative total general-fund balance any cohort city recorded during the window.

The remaining cross-city findings are context, not co-equal results, and they cut against a simple structural story. On tax effort, Radford was not an outlier in the direction distress would predict: Harrisonburg raised its real estate rate 46 percent over the window to fund school construction, while Radford's rate moved within a narrower band. On debt, Radford carried a moderate per-capita burden, below Harrisonburg and Charlottesville; its constraint was a declining net position, not aggressive borrowing. On tax-base and employer concentration it sat in the middle of the cohort. The structural indicators a distress model would flag do not single Radford out. The balance-sheet trajectory does.

This cohort layer also resolves an earlier three-city framing that set Radford against Harrisonburg and Charlottesville as fellow college cities. Two of those three operate municipal electric utilities and one, Charlottesville, does not. The mechanism this paper identifies is therefore absent in Charlottesville by construction, which is one reason a cohort built only on the college-anchor variable cannot locate what separates Radford. The municipal-electric variable, and the transfer policy it makes possible, is the dimension that framing missed.

The mechanism: the Electric Fund transfer

The cohort establishes the outlier. The transfer is a plausible mechanism through which that outlier status may have arisen. In every audited year from FY2011 through FY2024 Radford's municipal electric utility transferred money into the general fund. The transfer is the one line in Radford's finances that never moved in the direction the others did.

The smallest transfer in the series, in FY2011, was \$1,803,761. The largest, in FY2017, was \$5,728,844. The FY2014 draw of \$4,187,862 was a then-record, up 26 percent over the prior year, and it landed in the year the foundry closed and the tax base contracted. The transfer responded to none of the warning signs around it. It rose while reserves were thinning. It rose again in the year the council was on record calling the budget unsustainable. Across FY2011 through FY2024 the cumulative draw reached \$52,035,908. For a city whose general fund runs an unassigned balance in the range of five to seven million dollars, a \$52 million cumulative draw from a single enterprise fund is the financial spine of the period, not a rounding item. Pre-2011 transfers, which testimony dates to a 2004 decision, are additional and unquantified in the audited record, so the true total is larger than the audited series can support.

The transfer drew on the electric fund's accumulated resources year after year. In most years the transfer out exceeded the fund's operating income, so the distribution was not supported by current-year operating margin, and the fund's reported net position fell from a peak of \$16,160,210 in FY2014 to negative \$433,371 in FY2024. The clearest single-year view of the mechanism is FY2024 itself. The electric fund earned \$144,096 in operating income that year and transferred \$3,974,796 to the general fund, a draw exceeding what the utility earned by a factor of about twenty-seven. At the five-to-seven percent of operating revenue typical among peer municipal-electric cities, Radford's FY2024 transfer would have been near \$1.5 million;

holding other reported elements constant, a transfer at that level would have left the fund's ending net position materially higher and positive.

[Insert Table II about here]

[Insert Figure 5 about here]

Figure 5. Radford Electric Fund working capital and unrestricted net position, FY2015–FY2024. Source: authors' calculations from audited proprietary-fund statements; nominal dollars.

Two notes keep the series honest. First, the transfer out of the electric fund is not identical to the net subsidy the general fund received, because money moved in both directions in some years; the series tracked here is the electric fund's outbound draw, the quantity the council controlled, labeled as the utility draw rather than as a clean net subsidy. Second, net position is not synonymous with cash. A proprietary fund's net position includes capital assets, accumulated depreciation, debt-related balances, restricted amounts, and accounting restatements, so a decline in total net position does not by itself prove a dollar-for-dollar depletion of liquid reserves. The transfer series identifies a recurring use of electric-fund resources; its effect on fiscal capacity is read here through the fund's statement of revenues, expenses, and changes in net position and, where the ACFRs disclose it, through unrestricted net position, which the recovered FY2014 report shows at about \$11.2 million for the electric fund before the GASB 68 restatement. For the electric fund specifically, the audited proprietary-fund statements show working capital, cash, and unrestricted net position eroding in step with the transfers (Table A2). The fund's unrestricted net position fell from \$8.3 million in FY2016 to negative \$3.0 million in FY2024, and its working capital — current assets less current liabilities — fell from \$9.9 million in FY2015 to negative \$2.3 million in FY2024, while cash fell from \$5.8 million in FY2015 to under \$300,000 in FY2024. By FY2024 the electric fund's current liabilities exceeded its current

assets. That is the drawn-down liquid capacity the transfer mechanism implies, demonstrated at the fund level rather than inferred from total net position. The cash-flow statements make the same point in flow terms (Table A3): in 7 of the 10 years the transfer to the general fund exceeded the electric fund's net cash from operating activities, so the distribution was not fully covered by current operating cash flow and therefore required other available cash sources.

The interfund-transfer literature reads this pattern as the governance risk it warns about, realized. Enterprise funds are segregated so that a utility supports itself through user charges and maintains its own capital position. A transfer at this scale inverts that logic, converting the utility's reserve and its annual margin into a general-revenue source (Bland, 2005; Government Finance Officers Association, n.d.). The empirical record is direct: DiLorenzo (1982) found municipalities subsidizing their general funds from utility profits ran higher expenditures than comparable cities, a pattern he read as fiscal illusion, and Strauss and Wertz (1976) found municipal electric profits substituting for own-source revenue across North Carolina cities. Radford's repeated transfers coincided with a substantial erosion of the electric fund's net position.

One additional comparison inside the cohort sharpens the point. Harrisonburg also operates a municipal electric system, through the Harrisonburg Electric Commission, and its transfer ran at about 7 percent of utility operating revenue. Harrisonburg grew its net position 63 percent over the window. The same instrument, run at a peer-normal rate, was not associated with distress in a cohort city. Radford ran it at more than two and a half times that rate, and the fund's net position eroded to a deficit.

The wholesale shock arrived late

The explanation usually offered for distress among municipal-electric cities is the wholesale-power shock, and the record revises it. Purchased power sat in the low-to-mid 60s as a share of Radford's electric-fund operating revenue for most of the decade, was 61.8 percent as recently as FY2013, and climbed to 75.3 and 80.8 percent only in FY2023 and FY2024. The reserve drawdown, the audit findings, and the depletion of net position were all well underway before purchased power moved. The late shock is consistent with contributing to the final move into negative net position, not with explaining why so little was left to give by then. The wholesale pressure is genuine and shared across muni-electric peers; what is specific to Radford is what it did with the fund before the shock arrived. Since the study window closed, the city has acted on the cost side directly: on June 1, 2026 Radford exited its long-standing cost-based full-requirements contract with Appalachian Power for a competitive market portfolio procured through the Blue Ridge Power Agency, with not-to-exceed price caps and multiple suppliers. The cost pressure is now being actively managed, which underscores that what set Radford apart in the study period was the discretionary transfer rather than the wholesale bill.

The structured comparison: Radford and Martinsville

A revealing comparison for whether Radford's distress reflected a choice is a city that ran a broadly comparable utility and chose differently. Martinsville supplies it.

Radford and Martinsville are the closest structural match in Virginia's independent-city set for this mechanism. Both are small, post-industrial independent cities, roughly 16,070 and 13,476 residents respectively. Both watched an industrial base hollow out, a foundry in one and furniture and textiles in the other. Both own a municipal electric utility that buys nearly all its power

wholesale and resells it at retail. In FY2024 the two electric funds were within \$30,000 of each other in operating revenue, \$21,493,066 in Radford and \$21,521,371 in Martinsville, and purchased power consumed 80.8 percent of operating revenue in each. On the dimensions that drive a municipal electric utility's finances, the two cities are about as closely aligned as real jurisdictions allow, though they differ on other fiscal and demographic conditions noted in the research design.

[Insert Figure 2 about here]

Figure 2. Cumulative Electric Fund transfer to the General Fund, Radford vs. Martinsville, FY2011–FY2024.

Source: author's calculations from audited Annual Comprehensive Financial Reports; values are nominal.

Transfers are reported transfers out of the Electric Fund to the General Fund.

On the policy lever they diverge completely. Radford's electric fund transferred \$3,974,796 to its general fund in FY2024, about 18.5 percent of utility operating revenue. Martinsville's transferred zero. Across FY2011 through FY2024 Radford drew \$52.04 million from its electric fund into the general fund; Martinsville's comparable cumulative draw was zero. One line climbs steadily to fifty-two million dollars; the other lies flat on the axis.

The balance sheets reflect the accumulated effect of many transactions, but the transfer is the largest single discretionary difference between the two.

[Insert Table I about here]

Radford's electric fund ended FY2024 at negative \$433,371; Martinsville's at \$18,638,728, an increase over the prior year. Across all utilities, Martinsville's total enterprise net position stood at \$41,029,547 against Radford's \$6,855,499. On the general-fund side, Martinsville held \$5,255,868 in unassigned balance, about 13 percent of general-fund spending and near the conventional two-month minimum. Radford held negative \$4,545,839 in unassigned balance,

below the 10 percent reserve floor its own 2011 policy set and has not met since FY2019.

Radford is the only one of Virginia's municipal-electric cities the state's auditor has found to meet the criteria for fiscal distress. Martinsville is not.

What the comparison establishes is narrow. The transfer was a lever a council controlled and renewed each year, not a fixed feature of owning a power company, because a closely comparable city running a similar system under a similar wholesale burden chose not to pull it. By FY2024, Martinsville retained substantially greater reported electric-fund net position while Radford's electric fund had negative working capital.

Martinsville is not a story of fiscal comfort, and reading it that way would overstate the case. For FY2026–27 it closed a roughly \$4 million budget gap, opened when federal pandemic aid expired, by raising its real estate rate nine cents to about \$0.84, raising its trash fee, and raising electric rates about 6 percent. The deeper pressure Radford feels operates in Martinsville too: a small post-industrial tax base trying to fund a full city government with its own schools, courts, and constitutional officers. Martinsville also lacks Radford's university anchor, and its industrial loss ran deeper. By FY2024, Martinsville retained utility reserves that Radford lacked. It did not exempt the city from the structural mismatch. The comparison refines the structural thesis rather than overturning it: the slow pressure is the tax-base problem visible in both cities, and Radford's distinguishing feature was the sustained transfer.

One caution keeps the net-position comparison honest. Each city's business-type total bundles several utilities, electric, water, and sewer in both, plus transit in Radford and refuse in Martinsville. The enterprise series therefore compares each city's full utility operation rather than electric alone. The direction and magnitude of the divergence hold at both the enterprise level and, in FY2024, at the electric-fund level specifically.

Peer-field context

The matched pair is not the only comparison available, and the wider field shows Radford is the anomaly on the high side, not Martinsville on the low side.

[Insert Figure 3 about here]

Figure 3. Electric Fund transfer as a share of operating revenue: Radford vs. Virginia municipal-electric peers, FY2024. Source: author's calculations from audited Annual Comprehensive Financial Reports; Harrisonburg uses FY2023, the latest audited year then available. Note: the shaded 0–7 percent band is an observed peer range, not a normative benchmark or audit standard.

Expressed as a share of utility operating revenue, the FY2024 transfer was 18.5 percent in Radford. Among the other Virginia municipal-electric cities, Salem moved 6.8 percent, Harrisonburg 6.9 percent (FY2023), and Franklin 4.4 percent. Manassas and Martinsville moved nothing from their electric operations into the general fund. The peer field clusters between zero and about 7 percent. Radford sits at nearly three times the top of that range, and more than eleven percentage points above the nearest peer. The clustering matches the broader finding that enterprise-fund controls usually hold (Pierce et al., 2022); Radford is the exception that makes the norm visible. The deviation is not parochial, though the external benchmark must be read with care. The American Public Power Association reports a 2022 median of 5.1 percent of electric operating revenue for net payments and contributions to state and local government among reporting public-power utilities that made such contributions (American Public Power Association, 2022). That measure bundles payments in lieu of taxes, tax equivalents, fees, and other contributions, so it is broader than a pure electric-to-general-fund transfer and serves here as context rather than a directly comparable standard. Even read that way, Radford's 18.5 percent sits well above the national figure, not merely above its Virginia neighbors.

The comparison must be read with its seams visible. The cities differ in how they structure and report interfund transfers. Franklin's payment is a PILOT-style arrangement. Harrisonburg's figure is from FY2023 and bundles purchased power differently. Manassas records no transfer in its operating section. Those differences move the peer numbers by a point or two. They do not move Radford, and they do not close an eleven-point gap between Radford and the nearest peer. The one caveat that touches the transfer comparison directly is the bundled enterprise funds, which complicate utility-only figures drawn from enterprise totals. The matched-pair transfer finding itself is clean, with the same scale and wholesale burden, the opposite policy, and audited figures on both sides; the argument leads with it and bounds the rest. That none of the at-or-below-norm cities carries a distress designation while Radford alone does is corroborating context, not a second test: at six cases this is an existence observation, not a dose-response relationship, and it carries no statistical weight on its own.

Discussion

Fiscal illusion as a bounded inference

Everything established to this point is description: the numbers, the sequence, the audit record, the matched outcomes. What the documents do not contain is a council resolution stating that the transfer was chosen to avoid raising taxes. That claim is inference, and the discipline of the analysis is to mark it as such and to set out both the case for it and the case against. The paper's central finding does not rest on it: that a discretionary lever, alongside structural pressure, materially shaped the divergence holds whatever the council's motive. The fiscal-illusion reading is offered as the most economical account of why the choice was made and renewed, not as a premise the causal argument requires. Interfund transfers are not in themselves improper; they can serve as tax-equivalent payments, a return on municipal investment, or compensation for

services the general government provides the utility. The risk identified here is narrower: a transfer that lacks a documented formula, runs disconnected from the utility's working-capital and capital-replacement needs, and persistently exceeds its operating margin. This study does not observe citizen perceptions, ratepayer awareness, or council intent directly; fiscal illusion is treated here as an interpretive hypothesis supported by the revenue-substitution logic, the timing, and the mayor's contemporaneous statement, not as a directly demonstrated mechanism.

The case for the fiscal-illusion reading is the shape of the record. The transfer is the one practice that never paused while every other indicator deteriorated. It continued through the reserve drawdown, through the foundry closure, through an on-the-record warning from the city's own mayor in 2017, and through the first audit findings. A council acting to protect the reserve would have throttled the transfer; instead it spiked to its all-time high in FY2017, the year of the warning. Budgets and utility rates are adopted through public action, but a contribution to general government embedded in enterprise-fund flows is structurally less salient than the same fiscal choice expressed as a separately identified property-tax or general-revenue increase. That structural feature is what links the arrangement to the revenue-complexity form of fiscal illusion as an interpretive frame, not as a demonstrated effect on perception (Buchanan, 1967; Oates, 1988; DiLorenzo, 1982). The mayor's own 2017 framing, which described the 2004 decision to fund the general fund from electric income as a revenue substitute, supports the reading.

The case against treating it as proven is that motive is not in the record. No member is quoted choosing the transfer to dodge a tax increase. Budgets are built under many pressures at once, and a council can sustain a transfer for reasons other than tax avoidance: a genuine belief that the utility margin was surplus, institutional inertia, or a misreading of how much cushion remained. One year complicates a simple every-year-worse account: unassigned general-fund balance rose

about \$1.65 million in FY2018 before resuming its decline. The transfer did not pause that year, so the uptick reflects an offsetting general-fund event, not a break in the lever. Public-budgeting scholarship supplies a further non-illusion account of the persistence: revenue and expenditure arrangements often endure through institutional routine and the political difficulty of reopening a familiar allocation (Rubin, 2019). The transfer may have continued not only because it muted the visibility of a revenue choice but because it had become embedded in the city's recurring budget architecture.

The honest statement is conditional and bounded. The series is consistent with the reading that the transfer served as a less visible alternative to a tax increase, and the dissenting mayor's 2017 statement is suggestive, but the claim about council intent and resident perception remains an interpretive hypothesis rather than a documented finding. The study does not establish that Radford's residents failed to perceive the transfer or that officials chose it to avoid taxes.

The case also matches the prior literature's measurable prediction, not only its logic. DiLorenzo (1982) found that utility-subsidy cities spent more than otherwise-comparable cities, the result expected when a hidden revenue channel relaxes the constraint a visible tax would impose.

Radford's expenditure path fits the pattern. Its full-time-equivalent workforce grew about 43 percent across the window, from 279 positions in FY2015 to 399 in FY2024, against cohort peers that grew between 14 and 22 percent. The expansion is description. The link between the hidden channel and the expansion is inference, and it is the inference DiLorenzo's cross-section independently supports.

Direction of causation

A natural objection reverses the arrow: a city already sliding toward distress might reach for the transfer as a last resort, which would make the transfer a symptom rather than a cause. The

sequence inside Radford does not fit that reading. The transfer ran in every year, including the healthy ones. It was already substantial when the unassigned general-fund balance stood at its FY2013 peak, and it climbed to its all-time high in FY2017, years before the wholesale-power squeeze and while reserves still cushioned the budget. A transfer used only as a distress response would appear late and grow with the trouble; this one led the trouble and peaked ahead of it. The comparison closes the alternative from the other side, because Martinsville faced broadly similar structural pressure and declined the transfer, so the pressure did not compel it. The ordering within the case, the workforce path, and the counterfactual across the pair point together toward the transfer as a contributor to the decline rather than only a reaction to it.

Structural pressure as real but insufficient

The structural account is not wrong about Radford. The tax base is genuinely small and genuinely constrained, with a large exempt share and a flat real-terms trajectory, and it cannot on its own fund a full city government. That pressure is the slow background condition in both Radford and Martinsville, and neither the presence nor the absence of a transfer resolves it. The exempt share is certified at 44.8 percent of assessed value in the city's 2026 land book and has held in the low-to-mid 40s across the past decade, so the larger figures sometimes cited locally run above the assessment rolls rather than describing an earlier, higher reality since eroded. What the comparison indicates is that the structural condition was insufficient on its own to account for the divergent outcome. Two cities carried broadly similar structural burdens. One met the criteria for fiscal distress and one did not, and the most visible variable that separated them was discretionary. The structural literature explains why both cities are under pressure. It does not explain why only one deteriorated.

The attribution of municipal fiscal distress to structural causes is often correct as far as it reaches, but incomplete in a way that matters for policy. When structurally similar cities diverge, the divergence is the part worth explaining, and it can turn on a single governance choice the structural account does not capture. Attributing Radford's distress to its tax base alone would understate the role of a policy choice that plausibly deepened it and would offer the wrong lesson to the next city in the same position.

Alternative explanations

Several alternatives to the transfer deserve examination, and the comparative design lets each obvious candidate be checked. Debt is the first. Radford did not borrow its way into distress: its per-capita debt was moderate and below two cohort cities, and its binding constraint was a depleted net position rather than a heavy debt-service load. Capital spending is the second. The electric fund's deterioration tracks the transfer out, not a surge in utility capital investment, and the fund's operating revenue was structurally flat across the window rather than collapsing. Accounting and audit quality are the third. The two standard transitions that step net position down, GASB 68 and GASB 75, are identified and bounded in the data section and touch neither the transfer series nor the cumulative draw, and the recurring finding that appears from FY2019 is a financial-system weakness rather than a restatement that would account for the balance-sheet path. The wholesale-power burden, the explanation most often offered, is held constant by the matched pair at 80.8 percent and arrived too late to account for a decline already a decade old. A fifth candidate is the university itself, the one dimension on which the matched pair is not alike. That difference runs against the structural reading rather than for it: a university anchor stabilizes population and payroll, and Radford failed while holding an asset Martinsville lacked. The cohort holds the variable directly, because Harrisonburg is a college-anchored independent city

that owns a municipal electric utility, kept its transfer near the peer norm, and grew its net position. The available evidence does not eliminate these alternatives, but it leaves the transfer policy as a plausible and potentially material contributor. Each candidate is held roughly constant by the comparison or the cohort, ordered against by the timing, or bounded in the data.

The state's own assessment names more than a weak tax base. It points to structurally unbalanced budgeting, revenue-estimation and billing weaknesses, unpaid wholesale-power obligations, and administrative-capacity limits, most of which concern the later period. The claim here is not that the transfer was the sole cause but that it reduced the margin of safety available to absorb those pressures when they arrived. The transfer did not create Radford's structural pressure; the evidence suggests it spent the cushion that might have absorbed that pressure and the later administrative and wholesale-power shocks.

Practical implications for fiscal-distress monitoring and audit

[Insert Figure 4 about here]

Figure 4. Radford Electric Fund transfer as a share of operating revenue against the fund's year-end net position, FY2011–FY2024. Source: author's calculations from audited Annual Comprehensive Financial Reports; values are nominal, net position read with the GASB 68 and GASB 75 basis steps noted in the data section.

The attribution problem has a practical edge for the systems states and auditors use to catch distress before it hardens. Conventional balance-sheet indicators can register deterioration without identifying recurring enterprise-fund transfers as a potentially correctable underlying mechanism. Measurement models in this tradition (Gorina et al., 2018) score distress from balance-sheet ratios after the fact; a transfer-to-revenue ratio could complement them with a lever-specific signal available earlier. The Radford case suggests a narrower and cheaper candidate screen: the ratio of enterprise-fund transfers to utility operating revenue, tracked over

time and benchmarked against peers running the same utility model. That single ratio separated Radford from its entire peer field years before the balance sheet turned, and it is computable from the same audited proprietary-fund statements the early-warning models already consume. The flag is operationally simple and does not require cross-city comparison: a recurring transfer that exceeds current operating income or operating cash flow should prompt review of working capital, capital-replacement needs, debt obligations, and the policy basis for the transfer. Radford's FY2024 transfer ran about twenty-seven times the fund's operating income. The zero-to-seven-percent peer range is indicative context, not a standardized benchmark, and the national 5.1 percent figure for public-power payments and contributions (American Public Power Association, 2022) is a broad external reference rather than a transfer-specific threshold. A transfer that persistently exceeds the fund's operating income or operating cash flow should prompt review of whether distributions are being supported by accumulated resources, nonoperating cash flows, or other available sources, well before aggregate balance-sheet measures turn. The ratio is not proposed as a stand-alone measure of fiscal distress: financial-condition research has not converged on a single sufficient indicator set, and such measures work best when tied to a specified analytical purpose and read alongside liquidity, solvency, and reserve measures (Iacuzzi, 2022). Here the ratio isolates one budget mechanism, the recurring use of enterprise-fund resources to support general operations. The annual ratio sat in the high single digits to low teens early in the window and ran at eighteen to thirty percent from FY2015 forward, while the fund's net position fell from its FY2013 peak to a deficit; Radford's ratio stood out against the peer range years before the balance sheet turned, though whether such a screen predicts distress would require prospective testing. Whether the ratio improves prediction when

added to established financial-condition models across a broader population of municipal utilities is a question for future research.

What the design supports, and what it does not

No single layer carries the claim alone; together they support what none supports alone, that a sustained, unguarded transfer of utility margin into the general fund can materially weaken a utility-owning city's fiscal capacity. The design does not claim the transfer is Radford's only fiscal weakness or assign it a precise causal share; it indicates that discretionary transfer policy was a material, potentially avoidable contributor to the deterioration.

Limitations

Three limits bound the claim. The motive behind the transfer is inference rather than documented intent, and the paper holds it as a hypothesis consistent with the Martinsville contrast, the timing, and the absence of a rate increase, not as proven council purpose. Several supporting cross-city comparisons carry reporting seams, including the bundled enterprise funds, the differing taxpayer-concentration denominators, and the mixed metropolitan-versus-city income bases; the transfer finding is clean, and the argument leads with it and bounds the rest. The generalization also rests on a small field. Virginia has a limited set of municipal-electric independent cities, and while the matched pair and the peer field together carry more weight than either alone, the reach of the finding beyond comparable muni-electric jurisdictions is a question for replication rather than a claim this single case can settle.

Conclusion

Radford did not decide to become a fiscally distressed city. It arrived there in part by repeating one budget decision every year: to draw on the electric utility's margin through an interfund

transfer. That decision moved support through enterprise-fund flows rather than a separately identified tax line, an arrangement less transparent than a visible property-tax increase, and it continued in good years and bad until the fund's accumulated position was gone. The cumulative draw reached \$52.04 million, the utility's net position went negative, and the general fund's reserve turned into a deficit.

The structural account of municipal fiscal distress would have predicted pressure on Radford, and it would have been right about the pressure and incomplete about the outcome. A closely comparable city ninety miles away carried a broadly similar structural burden, ran a broadly similar utility at a similar scale under a similar wholesale cost, and ended the window with positive electric-fund net position, a positive general-fund unassigned balance, and no fiscal-distress designation; the most visible difference in policy was that it declined to pull the one lever Radford pulled every year. Radford's experience does not show that enterprise-fund transfers alone create fiscal distress, nor does it negate the importance of a constrained tax base, administrative capacity, or wholesale-power costs. It shows that recurring transfers can reduce a utility-owning locality's margin of fiscal safety before those pressures intensify. The comparison with Martinsville and the within-case sequence indicate that sustained electric-fund transfers were a material contributor to weakened fiscal capacity in Radford. The practical implication is not a universal transfer cap but a monitoring discipline: governments and oversight bodies should examine whether enterprise-fund distributions are supported by available working capital, capital-replacement needs, and transparent policy, rather than treated as a recurring substitute for general revenue. One matched comparison cannot establish that pattern across the roughly two thousand municipal electric utilities in the United States; the transfer-to-revenue ratio gives replication a specific, computable place to look across that population.

Data availability and reproducibility

Every quantitative series in this manuscript is traceable to a named primary source. The underlying figures are drawn from the audited Annual Comprehensive Financial Reports of Radford, Martinsville, Charlottesville, Harrisonburg, and Williamsburg, cross-validated against the Virginia Auditor of Public Accounts Comparative Report where coverage allows. The cohort and mechanism series are documented to the source-row level in two companion data workbooks, available on request, the second carrying twenty-five worksheets with per-figure citations and cross-validation tabs.

The electric-fund operating arc (FY2011–FY2024) is built from each ACFR's Statement of Revenues, Expenses, and Changes in Net Position for the Electric Fund, including the FY2014 figures recovered from the archived report (Archive document 469, posted May 28, 2026; re-scanned and verified against the accounting identity and the FY2013 net-position tie on June 16, 2026). The net-position series carries per-year basis tags marking the GASB 68 (FY2015) and GASB 75 (FY2018) adoptions, which affect net position only. The 2004 origin of the transfer practice rests on testimony entered into the April 17, 2017 Radford City Council minutes and is treated as testimony, not as an audited figure. Where the record cannot support a figure, the analysis says so rather than estimating.

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Table I

Radford and Martinsville: FY2024 Audited Comparison and Subsequent Fiscal Status

Panel A. FY2024 audited financial measures.

Measure (FY2024 audited)	Radford	Martinsville
Population (2020 Census)	~16,070	13,476
Electric Fund operating revenue	\$21,493,066	\$21,521,371
Purchased power, % of operating revenue	80.8%	80.8%
Electric Fund operating income	\$144,096	\$1,062,447
Electric → General Fund transfer	\$3,974,796 (18.5%)	\$0
Electric Fund net position, year-end	(\$433,371)	\$18,638,728
Business-type activities net position (all enterprise funds)	\$6,855,499	\$41,029,547
General Fund unassigned fund balance	(\$4,545,839)	\$5,255,868

Panel B. Post-FY2024 status and context (dated; not FY2024 audited figures).

Measure (post-FY2024)	Radford	Martinsville
Cumulative electric → GF transfer, FY2011–FY2024	\$52,035,908	\$0
Own reserve-floor policy (10% of GF)	breached since FY2019	met
Virginia APA fiscal-distress action (2025–26)	met criteria; state assistance recommended	none
Real estate tax rate	~\$0.84 (eff. Jan 1, 2026)	~\$0.84 (FY2027)

Notes. Radford's FY2024 total general-fund balance was approximately (\$1,940,000); the unassigned component shown above is more negative. "Business-type activities net position" bundles each city's full enterprise operations (electric, water, sewer, plus transit in Radford and refuse in Martinsville). Source: each city's audited ACFR and Virginia Auditor of Public Accounts correspondence.

Table II

City of Radford Electric Fund Operating Arc, FY2011–FY2024

Transfers out are the Electric Fund draw into the General Fund. "Net position, year-end" is total Electric Fund net position, not a cash or working-capital measure; read it with the GASB basis steps. In 10 of the 14 years the transfer exceeded the fund's operating income, so the

distribution was not supported by current-year operating margin. Nominal dollars; parentheses denote negative balances. † GASB 68 (pensions) adopted FY2015; ‡ GASB 75 (OPEB) adopted FY2018, both restating beginning net position downward (Electric Fund GASB 68 share ≈ \$1.2M). FY2014 recovered from the archived ADID 469 ACFR. Source: City of Radford ACFRs, Exhibit 8, Electric Fund column.

FY	Op. revenue	Purch. power %	Op. income	Transfer to GF	Transfer %	Net position, year-end
2011	\$20,993,851	71.7%	\$1,824,914	\$1,803,761	8.6%	\$12,234,152
2012	\$24,850,183	69.7%	\$2,913,211	\$2,395,454	9.6%	\$12,735,890
2013	\$29,329,304	61.8%	\$6,540,495	\$3,332,947	11.4%	\$15,989,873
2014	\$24,592,895	63.6%	\$4,361,310	\$4,187,862	17.0%	\$16,160,210
2015 †	\$20,038,936	68.7%	\$1,962,439	\$3,560,447	17.8%	\$13,333,200
2016	\$19,609,755	62.8%	\$3,045,925	\$3,670,732	18.7%	\$12,707,703
2017	\$19,443,957	61.4%	\$3,662,418	\$5,728,844	29.5%	\$10,648,304
2018 ‡	\$20,070,855	61.0%	\$4,100,732	\$5,329,932	26.6%	\$9,075,462
2019	\$20,333,976	60.8%	\$4,069,658	\$4,079,599	20.1%	\$9,054,559
2020	\$19,222,621	64.6%	\$2,504,264	\$4,079,599	21.2%	\$7,455,786
2021	\$20,170,162	65.2%	\$2,765,955	\$2,879,599	14.3%	\$7,306,297
2022	\$19,955,055	68.1%	\$2,400,219	\$3,021,322	15.1%	\$6,613,621
2023	\$20,050,870	75.3%	\$776,646	\$3,991,014	19.9%	\$3,394,294
2024	\$21,493,066	80.8%	\$144,096	\$3,974,796	18.5%	(\$433,371)
Total				\$52,035,908		

Table A1

Case-Selection Candidate Field: Virginia Municipal-Electric Independent Cities (FY2024 audited; HEC FY2023)

Selection criteria, applied before transfer practice defined the comparison: electric-fund operating scale (proximity to Radford's operating revenue), purchased-power burden, and a post-industrial profile (sustained loss of a dominant manufacturing base). Martinsville is the only candidate close to Radford on all three; Salem matches the wholesale burden but is about twice Radford's scale; Manassas and HEC are larger and structurally different; Franklin is smaller and its general-fund payment is a PILOT rather than a discretionary transfer; Charlottesville is excluded as a non-municipal-electric city. Source: each utility's audited Statement of Revenues, Expenses, and Changes in Net Position (Electric Fund column); Harrisonburg Electric Commission FY2023 audited report, Note 10. Martinsville's purchased-power share uses the "other charges" wholesale line; not discretely disclosed for HEC.

City	Electric op. revenue	Scale vs. Radford	Purch. power %	Transfer to GF	Post-industrial	Selection
Radford	\$21,493,066	1.00×	80.8%	\$3,974,796 (18.5%)	yes (foundry)	case under study
Martinsville	\$21,521,371	1.00×	80.8%	\$0	yes (furniture/t extiles)	selected — nearest on all three
Salem	\$46,176,847	2.15×	81.0%	\$3,160,000 (6.8%)	no (stable suburb)	matches burden; ~2× scale
Manassas	\$49,501,186	2.30×	64.2%	\$0	no (NoVA growth)	larger; lower wholesale burden
Harrisonburg (HEC, FY2023)	\$75,121,978	3.49×	n/a	\$5,200,000 (6.9%)	no (university)	separate commission; much larger
Franklin	\$16,480,253					0.77×

Table A2

Radford Electric Fund Liquidity Bridge, FY2015–FY2024

Working capital (current assets less current liabilities) is the strongest liquidity measure shown here, and cash is the most liquid line; unrestricted net position is a broader residual that can be affected by long-term balances, including pension and OPEB, and is not strictly liquid. All figures are electric-fund-specific, from the Electric Fund column of each year's audited Statement of Net Position – Proprietary Funds, with unrestricted figures confirmed against the management's-discussion narrative in each ACFR. The series reflects the GASB 68 (FY2015) and GASB 75 (FY2018) basis steps. Nominal dollars; parentheses denote negative balances.

Source: City of Radford ACFRs, FY2015–FY2024, proprietary-fund statements (electric-fund unrestricted for FY2015 not separately stated in that year's narrative).

FY	Cash	Current assets	Current liabilities	Working capital	Unrestricted net position
2015	\$5,839,557	\$11,804,879	\$1,935,432	\$9,869,447	—
2016	\$3,535,167	\$10,533,141	\$1,151,360	\$9,381,781	\$8,347,477
2017	\$5,179,665	\$7,540,433	\$1,196,113	\$6,344,320	\$5,351,666
2018	\$3,090,059	\$7,574,627	\$1,986,501	\$5,588,126	\$4,542,262
2019	\$2,143,351	\$6,578,120	\$991,202	\$5,586,918	\$4,634,776
2020	\$2,210,315	\$6,534,392	\$2,121,361	\$4,413,031	\$3,422,104
2021	\$4,236,545	\$6,923,026	\$2,045,261	\$4,877,765	\$3,782,731
2022	\$3,887,737	\$6,370,521	\$2,079,401	\$4,291,120	\$3,349,374
2023	\$795,746	\$3,269,515	\$2,033,627	\$1,235,888	\$406,148
2024	\$292,817	\$3,064,054	\$5,322,017	(\$2,257,963)	(\$2,994,460)

Table A3

**Radford Electric Fund: Operating Cash Flow Relative to General-Fund Transfers,
FY2015–FY2024**

Net cash from operating activities is the Electric Fund column of each year's audited Statement of Cash Flows – Proprietary Funds; the transfer to the general fund is the audited interfund transfer out (Table II). "Transfer less operating cash flow" is the amount by which the

distribution exceeded the cash the fund generated from operations, which was not fully covered by current operating cash flow and required other available cash sources. In 7 of the 10 years the transfer exceeded operating cash flow. Nominal dollars; parentheses denote negative.

Source: City of Radford ACFRs, FY2015–FY2024, proprietary-fund statements of cash flows.

FY	Operating cash flow	Transfer to GF	Transfer – op. cash flow	Transfer ÷ op. cash flow
2015	\$2,894,886	\$3,560,447	\$665,561	123%
2016	\$2,690,849	\$3,670,732	\$979,883	136%
2017	\$4,116,883	\$5,728,844	\$1,611,961	139%
2018	\$5,159,787	\$5,329,932	\$170,145	103%
2019	\$3,692,654	\$4,079,599	\$386,945	110%
2020	\$4,551,564	\$4,079,599	(\$471,965)	90%
2021	\$3,019,298	\$2,879,599	(\$139,699)	95%
2022	\$3,163,795	\$3,021,322	(\$142,473)	95%
2023	\$1,271,079	\$3,991,014	\$2,719,935	314%
2024	\$3,618,267	\$3,974,796	\$356,529	110%

Statements and Declarations

Author. Tommy N. Turner, Independent Researcher (no institutional affiliation), Williamsburg, Virginia, USA. The author is a former corporate banker (approximately thirty years) with an MBA in finance; the argument rests on the reproducible audited record rather than on authority.

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Data availability. All quantitative series derive from publicly available primary sources, principally the audited Annual Comprehensive Financial Reports of the cities studied, the Virginia Auditor of Public Accounts records, and the certified 2026 City of Radford land book. Companion workbooks documenting every reported figure to its source are available from the author on request.

Prior and related work. This working paper develops the author's prior public reporting on the same audited record, most directly the report "Two Cities, One Machine: Radford and Martinsville" (Zenodo, DOI 10.5281/zenodo.20725722). It is a distinct scholarly treatment of that record, not a republication.

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