



VERMONT LEGISLATIVE  
**Joint Fiscal Office**

# Long-Term Funding Options for the Vermont Universal Service Fund

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As required by  
Act 78 (2023), Sec. C.116

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## Executive Summary

The Vermont Universal Service Fund (VUSF) was created in 1994 to provide equal access to affordable telecommunications and services, including Enhanced 911 (E-911) call-taking and routing. Current statute requires that 1/6 of VUSF revenues go to the Vermont Community Broadband Fund and the remainder to five services in the statutory order outlined in [30 V.S.A. § 7511\(a\)\(1\)](#):

1. Costs of the fiscal agent that manages the Fund
2. Telecommunications Relay Services (TRS): Allows those with hearing or speech disabilities to place or receive telephone calls<sup>1</sup>
3. The Vermont Lifeline Program: Offers a monthly discount on telephone service for low-income consumers<sup>2</sup>
4. E-911 Services: The E-911 system reports phone number and location information to certified call-takers to allow for more efficient routing to the appropriate public safety dispatchers<sup>3</sup>
5. Connectivity Fund: The Connectivity Fund supports both Connectivity Initiative grants and the High-Cost Program<sup>4</sup>

Currently, the VUSF is funded through a 2.4% Universal Service Charge (USC) on retail telecommunications in the state. Retail telecommunications include traditional landline or wireline services, postpaid and prepaid wireless plans, and interconnected Voice over Internet Protocol (VoIP) services. Federal legislation prohibits taxes on internet or data plans.

Revenues generated by the USC have faced two major headwinds over the past decade. First, fewer consumers in Vermont have a traditional landline, decreasing the size of the base paying the charge. Between June 2012 and June 2022, the number of wireline (landline) subscriptions in Vermont fell by more than half, from 279,000 to 136,000.<sup>5</sup> Second, wireless services providers have, over time, allocated a smaller percentage of plan costs to voice services – as opposed to data services, which are not subject to the charge per federal law. For example, an unlimited plan costing \$70 per month might only allocate 12% of the plan cost to voice services, limiting VUSF revenue to \$0.20 per month.

As a result of these factors, revenues from the USC have decreased significantly. Between fiscal year 2016 and fiscal year 2023, VUSF revenues decreased from \$6.5 million to less than \$5 million – despite the fact that the USC rate increased by approximately 17.0%, from 2.0% to 2.4% in 2019.<sup>6</sup>

The decline in VUSF funding has impacted the E-911 Board. Over the same period between 2016 and 2023, E-911 Board allocations from VUSF decreased from \$5.03 million to \$3.86 million (recall they are fourth in line to receive funding). The E-911 Board has responded to this funding decrease by implementing operational savings and eliminating reserve funds but has also received General Fund transfers of \$1.80 million in fiscal year 2021 and \$2.15 million in fiscal year 2024 to bridge the gap and invest in technology.<sup>7</sup>

<sup>1</sup> “Telecommunications Relay Service – TRS.” *Federal Communications Commission*. August 16, 2022. Accessed January 8, 2024. <https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs>.

<sup>2</sup> “Lifeline Telecommunications Program.” *Vermont Department of Public Service*. Accessed January 8, 2024. <https://publicservice.vermont.gov/lifeline-telecommunications-program>.

<sup>3</sup> “911 and E911 Services.” *Federal Communications Commission*. December 4, 2023. Accessed January 8, 2024. <https://www.fcc.gov/general/9-1-1-and-e9-1-1-services>.

<sup>4</sup> Per [30 V.S.A. § 7515](#), the High-Cost program offers support for capital network improvements in “high-cost” areas.

<sup>5</sup> “Voice Telephone Services Report.” *Federal Communications Commission*. Monday August 28, 2023. Accessed January 8, 2024. <https://www.fcc.gov/voice-telephone-services-report>.

<sup>6</sup> Act 79 of 2019 increased the USC from 2.0% to 2.4%.

<sup>7</sup> Big Bill – Fiscal Year 2024 Appropriations Act.

<https://legislature.vermont.gov/Documents/2024/Docs/ACTS/ACT078/ACT078%20As%20Enacted.pdf>

This report responds to the statutory charge in Act 78 (2023) to evaluate long-term sources of funding for the VUSF in four ways:

- First, it discusses the development of the VUSF and the mechanics of E-911 call-taking services
- Second, it discusses the current VUSF funding predicament and establishes a long-run revenue target that would ensure adequate funding for all VUSF programs
- Third, it evaluates various options to provide sufficient and sustainable long-term revenues through both an efficiency and equity lens and offers recommendations for legislators
- Finally, it evaluates the structure of the VUSF, with specific attention to the two largest revenue needs, broadband and the E-911 Board

This report offers the following findings and considerations for the General Assembly:

**JFO estimates that to keep VUSF on track for long-run sustainable funding, as currently structured, funding in fiscal year 2025 would need to increase by \$2.1 million for a total of \$6.6 million. With inflation, the total annual cost would increase to approximately \$7.1 million by fiscal year 2029.** This is a substantial increase from the \$4.5 million in revenues currently forecasted for fiscal year 2025. JFO estimates that absent action from the General Assembly, the gap between revenue and programmatic needs will increase to \$3.3 million by fiscal year 2029.

**Alternative funding approaches are needed to address the decline in telecommunications revenue.** For example, a monthly fee of \$0.70 for every wireline and wireless access line could raise an estimated \$7.28 million per year, sufficient revenue for VUSF for every year in the study period. Other funding options may face volatility or implementation challenges. For example, JFO estimates the retail telecommunications charge would need to increase from the current 2.4% to nearly 4.7% in fiscal year 2029 to provide enough revenue for the programs in VUSF based on current trends – and the base could continue to shrink in future years. It should be noted that the General Assembly has made transfers from the General Fund to support E-911 in recent years to make up for insufficient VUSF revenues.

**Vermont’s current E-911 funding structure is an outlier: it is one of only two states that funds E-911 through its universal service fund (USF) and the only one to rely solely on a USF for the entirety of dedicated statewide E-911 funding.** All other states have a source of dedicated funding for E-911 services – in most cases, a per line fee -- and another dedicated source of funding for other USF services, which is generally either a retail charge or a per line fee.

**Finally, the mandated allocation of one-sixth of the retail telecommunications charge to the Vermont Community Broadband Board (VCBB) for connectivity grants adds extra fiscal pressure to VUSF.** Vermont received \$474 million for broadband network build-out through the Infrastructure, Investment and Jobs Act (IIJA) and American Rescue Plan Act (ARPA).<sup>8</sup> This amount significantly dwarfs the current \$800,000 yearly contribution to broadband from VUSF. Removing the allocation to the VCBB could ease the pressure of revenue shortfalls, but that action alone is not enough to completely cover the difference between programmatic demands and available revenue.

<sup>8</sup> Mearhoff, Sarah. “Vermont to receive \$229 million in federal funding for broadband.” *VT Digger*. June 26, 2023. Accessed January 12, 2024. <https://vtdigger.org/2023/06/26/vermont-to-receive-229-million-in-federal-funding-for-broadband/>.

## **Enabling Legislation**

Act 78 (2023)

Sec. C.116 VERMONT UNIVERSAL SERVICE FUND; JOINT FISCAL OFFICE STUDY

On or before January 15, 2024, the Joint Fiscal Office shall analyze options for changing the financing mechanism for the Vermont Universal Service Fund to ensure the long-term sustainability of the programs funded through the Vermont Universal Service Fund, including the Enhanced 911 system. The Joint Fiscal Office may consider and further refine the analysis and recommendations included in the Secretary of Administration's report related to the funding of Enhanced 911 operations, dated January 15, 2022, and required by 2021 Acts and Resolves No. 74, Sec. E.235.

## Vermont Universal Service Fund Legislative History

The General Assembly established the Vermont Universal Service Fund (VUSF) and the Enhanced 911 Board (E-911 Board) with Act 197 (1994). Act 197 outlined the statutory allocation of funding and set a percentage charge on all retail telecommunications as the source of revenue for the Fund. Currently, VUSF supports the following programs through a 2.4% Universal Service Charge (USC):

*Vermont Community Broadband Fund:* The Vermont Community Broadband Fund receives one-sixth of USC revenues and is authorized to spend money on broadband preconstruction and construction grant programs, communications workforce development, and administrative expenses of the Vermont Community Broadband Board and grant recipients.

The fiscal agent allocates remaining funding in the statutorily-required order below:

1. *Fiscal Agent:* The fiscal agent that manages VUSF is paid for with VUSF revenues. The agent is selected by the Commissioner of Public Service through a competitive RFP process, and collects revenues, allocates funding to programs in VUSF as directed by the Commissioner, prepares financial statements, and manages the yearly audit process.
2. *Telecommunications Relay Service (TRS)* and the *Vermont Equipment Distribution Program:* TRS helps deaf, hard of hearing, and speech impaired individuals make and receive calls with the assistance of a trained operator. The Equipment Distribution Program loans equipment to low-income individuals requiring adaptive telephone equipment.
3. *Vermont Lifeline:* Vermont's implementation of the federal Lifeline program, which is designed to provide connectivity services to low-income consumers. The federal program offers a \$9.25 monthly discount on broadband services and a \$5.25 monthly discount for qualifying voice services.<sup>9</sup> The Vermont program offers a monthly discount of \$4.25 for qualifying voice services.
4. *E-911:* Routes phone number and location information of 9-1-1 calls to certified call-takers to ensure first responders are quickly informed of an emergency. This work includes maintaining equipment to handle and route 9-1-1 calls, training staff to ensure consistent call handling practices during emergencies, and maintaining locational databases.
5. *Connectivity Fund:* Provides grants to internet service providers that extend service to areas that are difficult to serve economically and makes investments in the telecommunications network through the High-Cost Program. Due to revenue shortfalls, the Connectivity Fund has not directly received funding from VUSF since 2021. However, broadband initiatives funded by the Connectivity Fund have received funding through appropriations to VCBB and its 0.4% share of USC revenue.

Given the long legislative history of these programs, this report will only present the highlights of major changes of legislation.

### Act 197 (1994):<sup>10</sup>

- Created the E-911 Board
- Set a statutory goal to complete a statewide interoperable E- 911 Network by 1995 (which was completed in 1998)
- Created the Universal Service Fund
- Set the funding priority order for the programs supported by the Fund
- Required that the Public Service Board (now the Public Utilities Commission) set the USC rate annually through rulemaking

<sup>9</sup> "Lifeline Program for Low Income Consumers." *Federal Communications Commission*. November 20, 2023. Accessed January 12, 2024. <https://www.fcc.gov/general/lifeline-program-low-income-consumers>

<sup>10</sup> <http://www.leg.state.vt.us/DOCS/1994/ACTS/ACT197.HTM>

**Act 190 (2014):**<sup>11</sup>

- Set the USC at a constant 2% per year
- Established the Connectivity Fund, and split revenues deposited in the fund by the fiscal agent equally between the High-Cost Program and the Connectivity Initiative
  - Connectivity Initiative grants are “awarded to internet service providers that agree to extend service to designated areas least likely to be served through the private sector or through federal programs.”<sup>12</sup>
  - The High-Cost Program “is intended to maintain a robust and modern telecommunications network in Vermont by making strategic investments in improved technology for all Vermonters.”<sup>13</sup>

**Act 41 (2015):**<sup>14</sup>

- Changed the allocation of revenues to the Connectivity Fund to 55% for the High-Cost program and 45% for the Connectivity Initiative.
- Created Communication Union Districts (CUDs). CUDs are municipal entities created by regional groupings of towns that drive the development of fiber networks in underserved areas. Appendix A includes a map of the current territories served by the 11 CUDs in Vermont.

**Act 79 (2019):**<sup>15</sup>

- Increased the USC from 2.0% to 2.4%. The entirety of the increase was allocated to the Connectivity Fund, meaning that the Connectivity Fund received 1/6 of Universal Service Fund revenues.

**Act 71 (2021):**<sup>16</sup>

- Changed the allocation of 1/6 of revenues from the 2.4% USC from the Connectivity Fund to the newly created Vermont Community Broadband Fund. “The purpose of the VCBB and Vermont Community Broadband Fund [is] to support policies and programs designed to accelerate community efforts that advance the State’s goal of achieving universal access to reliable, high-quality, affordable, and fixed broadband.”<sup>17</sup>

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<sup>11</sup> <https://legislature.vermont.gov/Documents/2014/Docs/ACTS/ACT190/ACT190%20As%20Enacted.pdf>

<sup>12</sup> “Connectivity Initiative.” *Vermont Department of Public Service*. Accessed January 12, 2024.

<https://publicservice.vermont.gov/telecommunications-and-connectivity/connectivity-initiative>

<sup>13</sup> “Vermont’s Universal Service Fund.” *Vermont Public Utility Commission*. Accessed January 12, 2024.

<https://puc.vermont.gov/telecommunication/state-programs>.

<sup>14</sup> <https://legislature.vermont.gov/Documents/2016/Docs/ACTS/ACT041/ACT041%20As%20Enacted.pdf>

<sup>15</sup> <https://legislature.vermont.gov/Documents/2020/Docs/ACTS/ACT079/ACT079%20As%20Enacted.pdf>

<sup>16</sup> <https://legislature.vermont.gov/Documents/2022/Docs/ACTS/ACT071/ACT071%20As%20Enacted.pdf>

<sup>17</sup> “VT Community Broadband Board (VCBB).” *Vermont Department of Public Service*. Accessed January 12, 2024.

<https://publicservice.vermont.gov/vt-community-broadband-board-vcbb>.

## E-911 Calling in Vermont

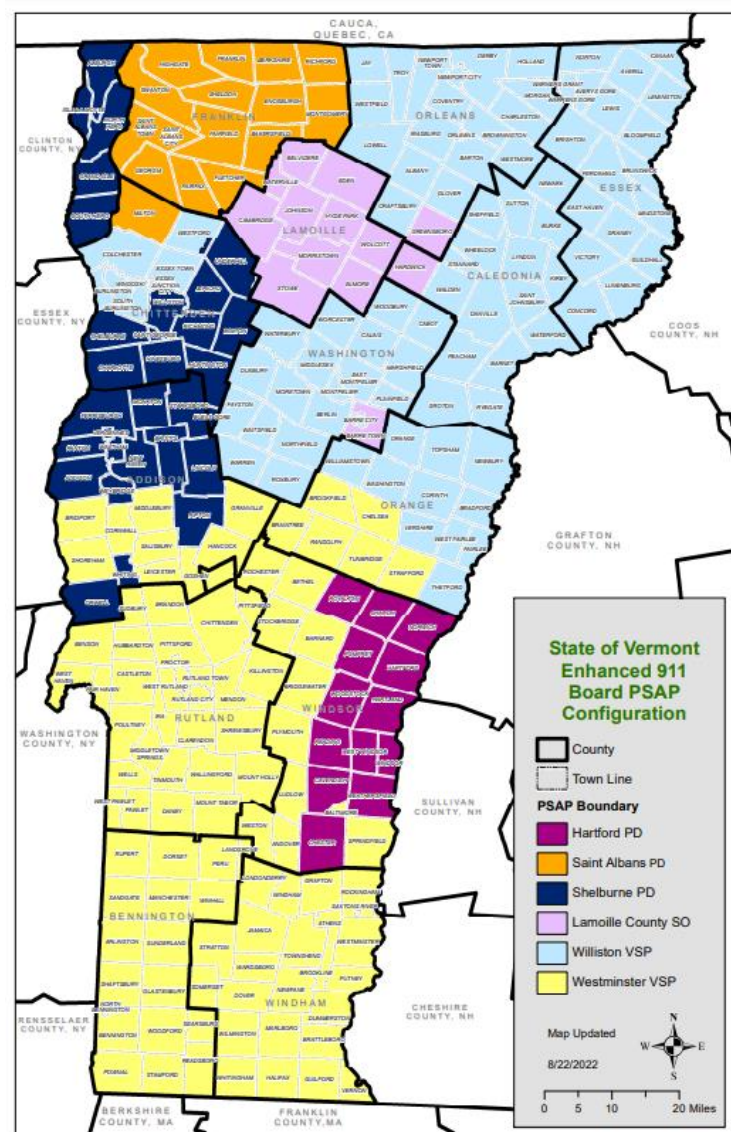
E-911 is the largest program funded by the VUSF. To understand how E-911 works and the difference between 9-1-1 call-taking and dispatch services, this section will outline the 9-1-1 call-taking process.

Before the call reaches a certified 9-1-1 call-taker, call location information is determined by a check against the appropriate database or GIS system, depending on whether the call comes from a landline, Voice over Internet Protocol (VoIP) or cell phone service. The call then gets routed to the appropriate Public Service Answering Point (PSAP) depending on the caller's location. Vermont has 6 PSAP locations: Shelburne Police Department, St. Albans Police Department, Lamoille County Sheriff's Office, Williston Vermont State Police Barracks, Hartford Police Department, and Westminster Vermont State Police Barracks. If a 9-1-1 call-taker is not available in the PSAP associated with the caller's location, the call gets routed to a secondary PSAP with call-taker availability. The map on this page shows each PSAP's service area.<sup>18</sup>

While gathering information about the nature of the call, the certified call-taker then finds and connects the call with the appropriate emergency services dispatcher through the call-taker's computer interface. Dispatch then sends out the necessary emergency services, such as police, fire department, and ambulance services. Depending on the circumstances, the call-taker may stay on the line with the caller to provide any needed instructions before emergency personnel arrive.

In total, the E-911 system in Vermont received 238,398 calls and 622 texts in 2022. Calls from cellular phones are slightly overrepresented in this total – 74% of total 9-1-1 calls came from cellular phones, despite representing 67% of all voice subscriptions in the state.<sup>19</sup> Vermont's 9-1-1 call rate per capita is 0.37. This figure is relatively low compared to the national average but is comparable to other New England states and some rural states, such as North Dakota.<sup>20</sup> Figure 1 on the next page summarizes the E-911 call-taking system in Vermont.

The line between 9-1-1 call-taking and dispatch services can be blurred, especially when the 9-1-1 call-taking and dispatch agencies are the same. However, E-911 refers to the initial answering of a 9-1-1 call,



<sup>18</sup> "Vermont's 911 System." *Enhanced 911 Board*. Accessed January 12, 2024. <https://e911.vermont.gov/forms-and-publications/system-information>.

<sup>19</sup> "2022 System Statistics." *Vermont Enhanced 911 Board*. Accessed January 12, 2024. <https://e911.vermont.gov/forms-and-publications/2022-system-statistics>; JFO Analysis.

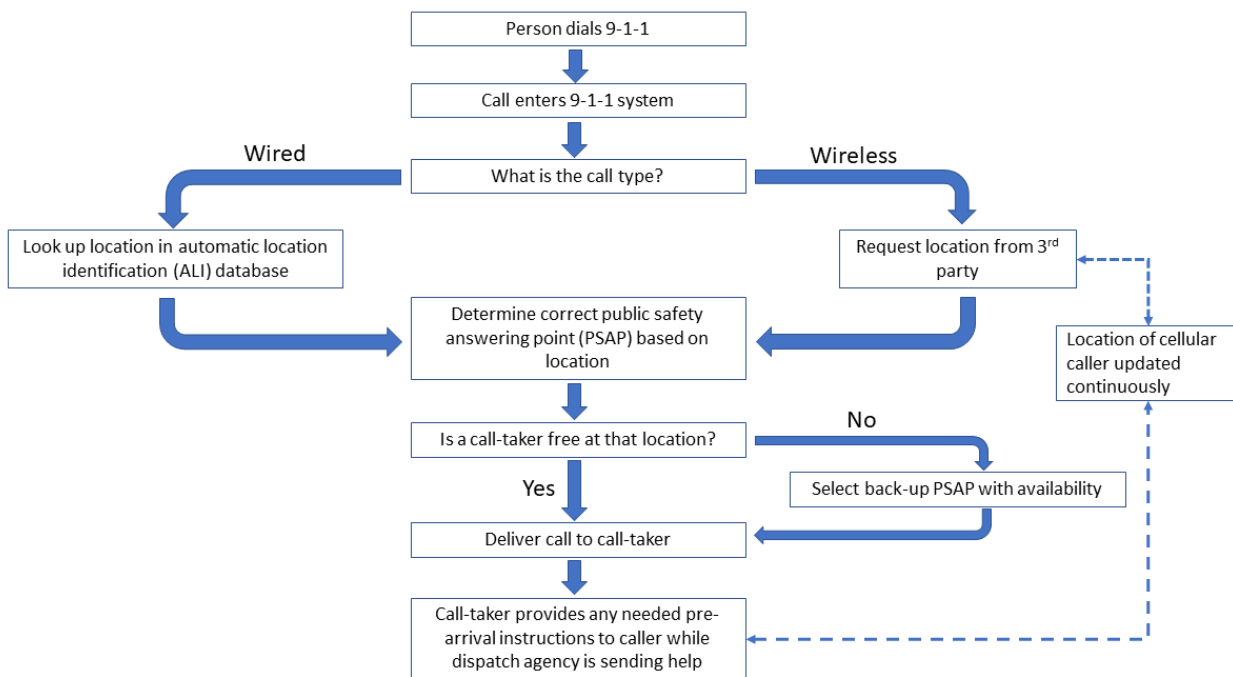
<sup>20</sup> "14<sup>th</sup> Annual Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges." (Washington, DC: Federal Communications Commission, 2023), <https://www.fcc.gov/file/24628/download>.



finding an available call-taker, and determining location of the caller and the services needed. Dispatch refers to the process of sending out and communicating with the appropriate public safety personnel while they are responding to a situation. For example, a 9-1-1 call in Barre City would get routed to the Williston Vermont State Police Barracks PSAP location. The call-taker would collect information about the situation and would relay that information to the dispatching agency, the Barre City Police Department, which would coordinate the first responders on scene. For another example, in Barre Town, the PSAP and dispatch agencies are the same – the Lamoille County Sheriff's Office.<sup>21</sup>

While the 9-1-1 and dispatch systems are closely related, dispatch contains a different set of structural and funding issues outside the scope of this report. For more information, please see the Regional Dispatch Working Group Report published December 2022, which set the stage for the Public Safety Communications Task Force, scheduled to deliver a report outlining the design and operation of a regional dispatch system by January 15, 2025.<sup>22</sup>

Figure 1: 9-1-1 Call-taking in Vermont



Source: <https://e911.vermont.gov/forms-and-publications/system-information>

<sup>21</sup> [https://dps.vermont.gov/sites/psd/files/documents/Towns%20and%20Dispatch%20Agencies\\_August2022.pdf](https://dps.vermont.gov/sites/psd/files/documents/Towns%20and%20Dispatch%20Agencies_August2022.pdf)

<sup>22</sup> <https://legislature.vermont.gov/assets/Legislative-Reports/Regional-Dispatch-Working-Group-Report-12012022-Act-185-Section-E.209.1.pdf>

## Revenue Trajectory

The decrease in the base for the USC has been dramatic. Since the establishment of the 2% charge in fiscal year 2015, the overall value of chargeable retail communications has decreased from nearly \$339 million to just over \$209 million, an overall decrease of 38.25% at an average rate of 5.85% per year.

*Table 1: Decline in the VUSF base*

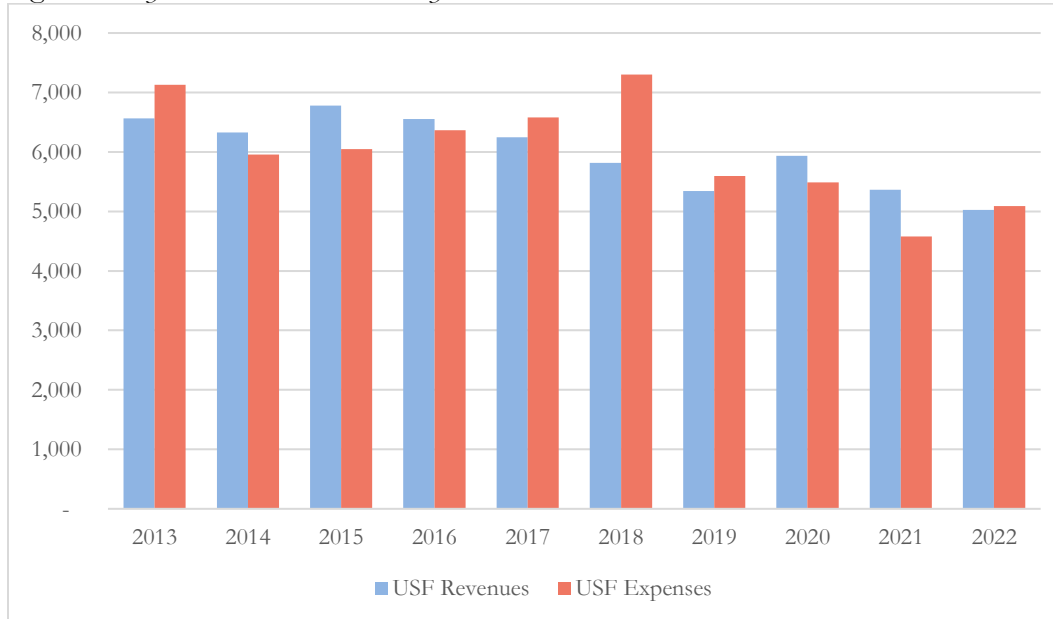
Fiscal Year	2015	2016	2017	2018	2019	2020	2021	2022
<b>Universal Service Charge</b>	2.0%	2.0%	2.0%	2.0%	2.0%	2.4%	2.4%	2.4%
<b>Telecommunications Base (millions \$)</b>	338.95	327.95	312.80	291.95	268.00	247.21	224.67	209.29
<b>Revenue (millions \$)</b>	6.78	6.56	6.26	5.84	5.36	5.93	5.39	5.02
<b>Percent Decrease from Previous Year</b>		-3.3%	-4.6%	-6.7%	-8.2%	-7.8%	-9.1%	-6.8%

*Source: VUSF Audited Financial Statements*

*<https://publicservice.vermont.gov/regulated-utilities/telecommunications/vermont-universal-service-fund>; JFO Analysis.*

Increasing the percentage charge from 2.0% to 2.4% in fiscal year 2020 did little to slow the decline in VUSF revenues. Between fiscal year 2016 and fiscal year 2022, revenues steadily decreased from \$6.5 million to just over \$5 million. While expenses increased from \$6.3 million to \$7.3 million in 2018, largely driven by approved allocations to the Connectivity Initiative, by fiscal year 2022 expenses had decreased to \$5.1 million to better align with revenues. Figure 2 presents the overall downward trend in VUSF revenue and expenses over the ten-year period between 2013 and 2022.

*Figure 2: 10-year VUSF Fiscal History*

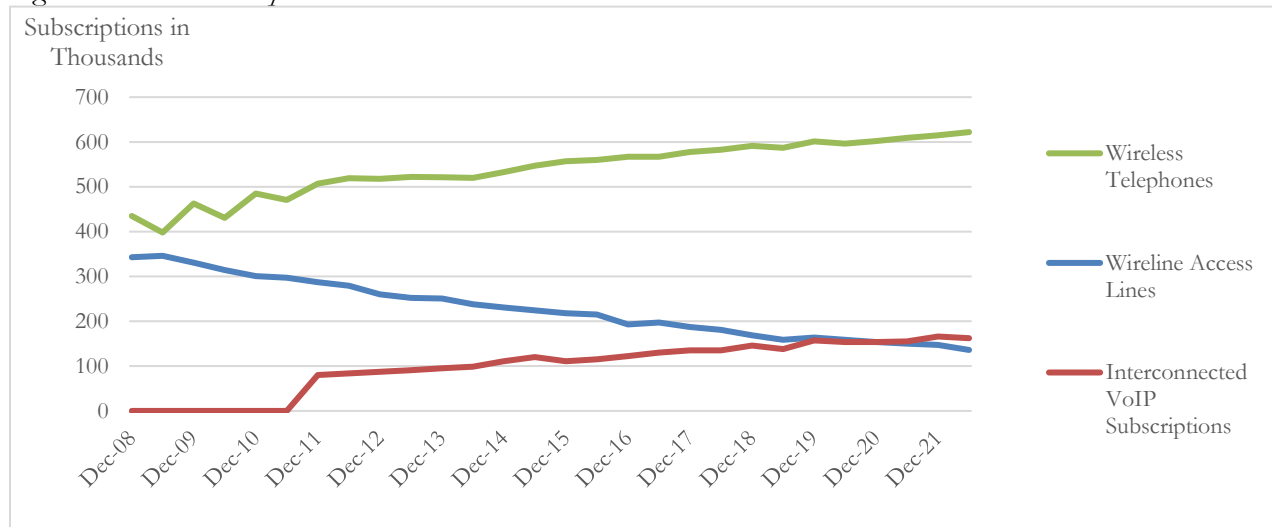


*Source: VUSF Audited Financial Statements*

The decrease in the number of wireline (traditional landline telephone) subscriptions and the associated move to wireless subscription plans, as shown in Figure 3, is the main source of the decline in VUSF revenues. With wireline plans, the full monthly cost is considered a telecommunications service and is assessed the 2.4% retail charge. With wireless services, the monthly plan cost can be allocated between voice services, which the charge can be assessed on, and data services, which it legally cannot. For example, the USC for an unlimited plan from a major wireless company costing \$70 per month could be as low as \$0.20,

meaning the share of the plan cost allocated to voice services is only \$8.33.<sup>23</sup> However, the increase in interconnected VoIP subscriptions has slightly blunted the decrease in VUSF revenues, since 100% of interconnected VoIP plan costs can be charged the USC.

Figure 3: Voice Subscriptions in Vermont



Source: Federal Communications Commission Voice Telephone Service Report

The VUSF revenues are insufficient to support the needs of all programs expected to be funded from the VUSF, and the E-911 Board shoulders much of the burden of revenue shortfalls. Between fiscal years 2017 and 2023 revenues from the VUSF to the E-911 Board decreased from \$4.76 million to \$3.8 million, which did not fully cover expenses that ranged from \$4.54 million to \$6.02 million. The table below shows the financials of the E-911 Special Fund between 2017 and 2023.

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>Carryforward</b>	891,912	1,010,242	1,015,616	1,282,174	286,415	35,200	(612,552)
<b>Revenue</b>	4,761,608	4,842,364	4,831,183	4,237,882	3,902,612	3,963,299	3,415,155
<b>Expenses</b>	4,643,278	4,836,990	4,564,626	5,233,640	6,024,227	4,540,651	4,576,977
<b>Other Sources</b>					1,800,000		1,300,000
<b>Balance</b>	1,010,242	1,015,616	1,282,174	286,415	35,200	(612,552)	(474,374)

Source: Department of Finance and Management Special Fund Reports

The General Assembly has used General Fund dollars to prop up declining USC revenues in recent years. Act 74 (2021; the fiscal year 2022 appropriations act) transferred \$1.8 million from the General Fund to the E-911 Special Fund (21711). Act 185 (2022; the fiscal year 2023 appropriations act) transferred \$1,300,000, and Act 78 (2023; the fiscal year 2024 appropriations act) transferred an additional \$2,115,000 (of which \$815,000 is allocated to support necessary 9-1-1 system upgrades in fiscal year 2024). In total, the General Assembly has transferred \$5.215 million to E-911 from the General Fund since 2020.

Vermont is not alone with challenges funding 9-1-1 call-taking services. Other states, particularly where 9-1-1 services are funded at the local level, reported challenges in providing even basic service or in transitioning

<sup>23</sup> JFO analysis

to Next Generation 911 (NG911) services.<sup>24</sup> As a result of revenue shortfalls, Michigan increased state surcharges on prepaid service from 5% to 6% and allocated \$16 million to their E-911 Fund to fund their transition to NG911 Services. In North Dakota, “911 fee revenues have never been sufficient to cover the full cost of 911 service. In addition, as the cost of technology and human resources increases the surcharge fees and percentages do not increase commensurate with those additional expenses. This means that local government must dig deeper into their general funds each year to support 911 services.”<sup>25</sup>

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<sup>24</sup> NG911 refers to 9-1-1 call-taking services provided over a digital, rather than analog architecture. NG911 allows certified call-takers to receive photos, videos, and enhanced location information. Vermont has a fully operational NG911 system.

<sup>25</sup> “14<sup>th</sup> Annual Report to Congress on State Collection and Distribution of 911 and Enhanced 911 Fees and Charges.”  
<https://www.fcc.gov/general/911-fee-reports>.

## Revenue Needs

The enabling legislation of this report required discussing revenue options that would ensure the “long-term sustainability of the programs funded by the Universal Service Fund.” This section will start by estimating the fiscal needs of all programs in the fund and will use this figure to evaluate various funding mechanisms presented later in the report. To provide estimates for program expenses, JFO relied on historical trends and averages of expenses found in VUSF audited financials or, in the case of the E-911 Board, carried forward most recent budget requests using a conservative inflator.

- *Fiscal agent:* This analysis assumes that VUSF will continue to use a fiscal agent to collect and manage funds. Fiscal agent costs have traditionally been approximately 2% of total fund revenue.
- *Telephone Relay Service (TRS) and Equipment Distribution:* Funding allocations for TRS and equipment distribution have stayed relatively constant over the past decade. The annual average since 2016 is \$216,000, including an outlier in fiscal year 2022, when the fiscal agent only allocated \$71,000 to TRS and equipment distribution. This report will conservatively assume long-term sustainable funding of \$250,000 for this program in fiscal year 2025 and increase this need by 2% per year to account for inflation.
- *Lifeline:* Unlike the federal Lifeline program, which provides a discount on voice and broadband plans, the Vermont Lifeline program provides a \$4.25 discount on telephone service only. The number of Lifeline credits offered by VUSF has decreased as the number of telephone subscriptions in Vermont has decreased. This estimate decreases the number of Lifeline credits issued in 2022 by the same rate of annual decrease as that of telephone subscriptions in Vermont from 2016 to 2022.
- *E-911:* In each fiscal year from 2016 to 2024, the E-911 Board received between \$4.5 and \$5 million. This estimate will start with the fiscal year 2024 budget of \$4.9 million and increase that amount each year by a 2% inflator to account for increases in staff and supply costs.<sup>26</sup> By fiscal year 2029, the estimated baseline revenue needs for the Board will be \$5.6 million.
- *Vermont Community Broadband Fund:* This estimate will maintain the Act 79 (2019) prescribed 1/6, or 16.56%, of VUSF revenues.

These needs sum to \$6.6 million in fiscal year 2025 and increase to \$7.1 million by fiscal year 2029, largely due to estimated inflationary increases in the E-911 Board budget. The estimate for each program can be found in Table 3. Note that this forecast is preliminary in nature and reflects a relatively conservative inflationary assumption. Actual costs may increase at a different rate.

Program	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
Fiscal Agent	0.13	0.13	0.14	0.14	0.14
TRS and Equipment	0.25	0.26	0.26	0.27	0.28
Lifeline	0.12	0.11	0.11	0.10	0.09
E-911	5.00	5.10	5.20	5.30	5.41
<b>Vermont Community Broadband Board (1/6 of total revenue)</b>	<u>1.09</u>	<u>1.11</u>	<u>1.13</u>	<u>1.15</u>	<u>1.18</u>
<b>Total Revenue Need</b>	<b>6.59</b>	<b>6.71</b>	<b>6.84</b>	<b>6.97</b>	<b>7.10</b>

<sup>26</sup> The 2% inflator is in line with the Congressional Budget Office’s long-term projections for PCE inflation. <https://www.cbo.gov/publication/58957>.

## Forecasted Funding Gap

Without action, the revenue picture is likely to deteriorate even further. From 2016 to 2022, the annual revenues generated by the USC decreased by more than 23%, and at an annualized rate of 3.74%. Carrying that rate of decrease forward, fund revenues will decrease to \$4.48 million in fiscal year 2025. One sixth of the estimated \$4.48 million is already statutorily allocated to the VCBB, leaving only \$3.73 million to be allocated to other programs. By fiscal year 2029, revenues are forecasted to decline to \$3.85 million, with \$3.21 million remaining for VUSF programs after the allocation to the VCBB.

This scenario would result in a widening gap between forecasted revenues and expenses in VUSF. In fiscal year 2025 the gap is forecasted to be \$2.11 million; it's estimated to increase to over \$3.25 million by fiscal year 2029. Table 4 shows the forecasted gap between estimated revenue needs and revenue generated by the 2.4% retail charge. The actual increase in the funding gap over this period mostly depends on inflation and the budgetary growth of the E-911 Board. If inflation is lower than the long-run Congressional Budget Office (CBO) estimate of 2%, the gap will be lower than what's presented below. However, if inflation or other budgetary pressures run higher, the funding gap will increase at a faster rate.

*Table 4: Estimated Universal Service Fund Revenue Gap (in millions)*

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
<b>Estimated Revenue Needs</b>	6.59	6.71	6.84	6.97	7.10
<b>Estimated Revenue Generated by the 2.4% Charge</b>	<u>4.48</u>	<u>4.31</u>	<u>4.15</u>	<u>4.00</u>	<u>3.85</u>
<b>Difference Between Revenue and Need</b>	-2.11	-2.40	-2.69	-2.97	-3.25

## Potential Funding Options

Per the charge of the enabling legislation, this section will present three options for providing long-term sustainable funding to VUSF and will consider the advantages and disadvantages of each: increasing the USC, instituting a per line fee, and using General Fund appropriations. The evaluation of each option will pay special attention to the funding needs of the E-911 Board, which is by far the largest program within VUSF and has experienced the burden of recent funding shortfalls.

### *Increase the Universal Service Charge*

The charge on all retail communications has been the funding mechanism for the VUSF since its inception in 1997. One option to improve VUSF revenues is to increase the USC above its current 2.4% rate. The table below shows how the percentage charge would have to increase to ensure long-term sustainability of the fund. Overall, the percentage charge would have to increase substantially to meet the needs of all programs through fiscal year 2029 as the size of the retail telecommunications base declines.<sup>27</sup>

*Table 5: Estimated Universal Service Charge (in \$ millions)*

	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029
<b>Estimated Revenue Needs</b>	6.59	6.71	6.84	6.97	7.10
<b>Estimated Revenue Generated by the 2.4% Charge</b>	4.48	4.31	4.15	4.00	3.85
<b>Size of Retail Telecommunications Base</b>	186.68	179.70	172.98	166.51	160.28
<b>Necessary Charge to Generate Sufficient Revenue</b>	<b>3.53%</b>	<b>3.74%</b>	<b>3.95%</b>	<b>4.18%</b>	<b>4.43%</b>

### **Considerations:**

Simply increasing the percentage charge would not require substantial administrative changes – carriers and retailers would continue to use the same structure and forms but remit an amount associated with the increased percentage charge. However, the base subject to the charge is declining. Therefore, increasing the percentage charge would only be a temporary solution and would likely require additional intervention by the General Assembly to cover necessary expenses in the future. For example, increasing the charge to 4%, a 67% rate increase, would only solve VUSF’s funding problem until 2027, when estimated revenues would again fall short of estimated expenditures. The percentage charge would need to increase to at least 4.5% in fiscal year 2029 (a near doubling of the current rate) to generate enough revenue to meet estimated expenses. Ultimately, this continuing erosion of the revenue base means that this option might not entirely meet the statutory charge of “ensuring the long-term sustainability” of the programs funded through VUSF.

In addition, the burden of increasing the percentage charge so significantly would fall unevenly and dilute the connection between users of the service and who pays. As noted above, the full cost of a wireline phone plan is subject to the 2.4% charge, while a relatively small fraction of a wireless plan is subject to the charge. Asking landline-only households to shoulder a larger share of the burden of fully funding E-911 call-taking, when most 9-1-1 calls are made by mobile users, weakens the connection between who uses and who pays for the service. In addition, increasing the charge would force older adults and more rural consumers, who are far more likely to have a landline, to shoulder more of the cost. Nationally, 6.9% of adults over 65 are “landline only,” compared to the just 0.2% of adults 35-44.<sup>28</sup>

<sup>27</sup> The decrease in the size of the telecommunications base has been estimated by carrying forward the 3.74% annual rate of decrease in USF revenues between 2016 and 2022.

<sup>28</sup> Blumberg, Stephen J. and Luke, Julian V. “Wireless Substitution: Early Release Estimates from the National Health Interview Survey, July-December 2022.” *National Center for Health Statistics*. May 2023. Accessed January 12, 2024. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless202305.pdf>

### *Per line charge*

This report assumes a per line charge would repeal the current 2.4% USC and assess a flat monthly fee for each wireline and postpaid wireless subscription with a unique telephone number. However, prepaid wireless subscriptions would continue to be assessed the 2.4% retail charge. Other states that have implemented a per line fee have made a similar distinction between postpaid and prepaid phone plans. With a postpaid voice subscription, customers pay for phone services after receiving a bill for the previous month. Prepaid customers instead pay for a certain number of minutes or data up front. Including prepaid customers in per line fee calculations would distort revenues, as the per line fee would be assessed each time someone tops up minutes, which could occur multiple times per month. In this analysis, revenue from prepaid wireless subscriptions contributes an additional \$240,000 at each per line rate. This number is conservative but reflects the inclusion of data in many prepaid phone plans, which would not be assessed the 2.4% charge.

When combined with revenue from prepaid phone lines, the per line charge would have to be about \$0.65 per line to generate enough revenue to cover the needs of VUSF programs early in the estimate period and \$0.70 to meet program needs starting in fiscal year 2028. Table 6 below shows the estimated amount of revenue raised by 5-cent increments in the per line fee, based on the number of pre and postpaid voice subscriptions in Vermont as of June 2022.

*Table 6: Per Line Fee Revenue Estimate (in millions \$)*

<b>Per Line Charge Amount</b>	<b>Estimated Revenue Generated By Per line Charge</b>	<b>Estimated Revenue Including Prepaid 2.4% Retail Charge</b>	
\$0.40	\$4.02	\$4.26	
\$0.45	\$4.52	\$4.76	
\$0.50	\$5.02	\$5.26	
\$0.55	\$5.53	\$5.77	
\$0.60	\$6.03	\$6.27	
\$0.65	\$6.53	\$6.77	<b>\$6.59 million</b> Estimated Revenue Needed in FY 2025
\$0.70	\$7.03	\$7.28	<b>\$7.10 million</b> Estimated Revenue Needed in FY 2029
\$0.75	\$7.54	\$7.78	
\$0.80	\$8.04	\$8.28	
\$0.85	\$8.54	\$8.79	

### *Other State Implementations*

Many other states use a per line fee to fund E-911 services, as shown on Table 7. Per line wireline, wireless, and VOIP fees range from \$3.36 per month in West Virginia to \$0.20 in Arizona, with a national average monthly fee of about \$1.05 per line. Prepaid per line rates are generally lower. Alabama has the highest per line surcharge at \$1.86 and California has the lowest, at \$0.30 per month. Percentage charges have a wide range in the states that use them. Arkansas charges 10%, while Ohio only charges 0.5%. Note that for other states, the per line charge funds E-911 only, not universal service fund programs. A separate per line or retail telecommunications charge generally supports other state universal service funds.



Table 7: Other State E-911 Funding Mechanisms

Service Type	Number of States Using a Per Line Charge	Number of States Using a Percentage Charge	No Charge	No Response
Wireline	47	3	0	0
Wireless	48	1	0	1
Prepaid	30	19	0	1
VoIP	44	0	2	4

Source: Federal Communications Commission 14<sup>th</sup> Annual 911 Fee Report

### Considerations:

A per line charge offers several advantages as a revenue source. First, it is simple for consumers to understand. For example, with a \$0.70 per line fee, a family with one landline and four cell phones would pay \$3.50 per month. Contrast that with a percentage charge, in which the amount paid to VUSF would depend on the retail cost of the plan that month and the amount a carrier allocated to voice services.

Unlike the percentage charge, which relies on a declining base, the number of lines (across all types) in Vermont has increased slightly over time. According to Federal Communications Commission (FCC) data, the number of lines increased by 30,000, or 3%, between June 2016 and December 2021.

### Disadvantages

Per line charges have three main disadvantages: their regressivity, the complexity of administering the fee with commercial customers, and their loss of purchasing power against inflation.

*Regressivity:* Since consumers pay the same amount through a per line charge regardless of income, lower income taxpayers would end up paying a larger percentage of their income through this fee. However, the relatively small size of a per line charge means that the differences in burden are slight. For example, with a \$0.70 per line charge, a family earning \$60,000 per year with three active cellphones would pay \$25.20 per year or 0.042% of their annual pre-tax income, but a family earning \$100,000 per year with the same three active wireless line would pay only 0.025% of their income in fees.

The regressivity of a per line fee could be addressed through differing fee design by voice subscription type. As shown in Table 7, many states apply a percentage charge to prepaid wireless products. Using a percentage charge for these products can mitigate two concerns. First, it avoids charging customers a per line charge each time they buy a new prepaid card or device, which may happen more frequently than once a month. Second, it could be an avenue to adjust the burden of the tax. While reliable and recent statistics on the relative demographics of mobile phone plan subscribers are not available, prepaid phones are likely more prevalent among users who face financial barriers to obtaining phone service subscriptions (which might require credit checks and be more expensive). Lowering the percentage charge for prepaid voice plans relative to the per line charge might reduce the burden for lower income prepaid wireless consumers.

*Commercial application:* An additional consideration is the complexity of applying a per line charge to commercial accounts that may have hundreds of extensions but only a few lines that allow for simultaneous inbound and outbound communication. States have addressed this challenge in different ways. Some states only apply the per line charge to residential customers, who are more likely to call 9-1-1. Other states, such as Maine, cap the number of lines that can be assessed the per line charge at a specific address.<sup>29</sup> Connecticut

<sup>29</sup> However, Maine is considering eliminating the cap to increase the cost to robocallers. According to a 2024 report by the Maine Public Utilities Commission: “The Commission has engaged with one VoIP company that said it had one customer billing account with 50,000 Maine telephone numbers for a call center. The company believes that under the MTEAF statute and the MTEAF rule that the company is only responsible to pay \$5.25 (21 Cents x 25 Line Cap Per Customer) because all 50,000 Maine telephone numbers are being billed to one customer billing account and current rules only require payment on the first 25 lines per customer.”  
<https://www.maine.gov/mpuc/sites/maine.gov/mpuc/files/inline-files/207%20Report%20%28003%29.pdf>

offers a fee schedule (shown in Table 8) that decreases with the number of wireline/VoIP/access lines at an address.<sup>30</sup> (Wireless consumers are assessed a flat fee per telephone number). The Connecticut Public Utilities Regulatory Authority adjusts this rate schedule annually to meet the funding needs of its 9-1-1 system.<sup>31</sup>

*Table 8: Connecticut E-911 Per Line Fee Rate Schedule*

# of Wireline/VoIP/Access Lines	Per-Line Monthly Fee
1	\$0.68
2	\$0.51
3	\$0.46
4 or 5	\$0.41
6 – 10	\$0.34
11 - 25	\$0.27
26 - 50	\$0.22
51- 99	\$0.17
100+	\$0.14

Wireless	Per-Line Monthly Fee
Telephone Numbers	\$0.68

*Inflation/fee purchasing power:* Periods of high inflation can erode the purchasing power of a per line fee that does not change over time. For example, between July 2021 and June 2023 inflation increased by 9.6% – a significant erosion of the real value of a static per line fee.<sup>32</sup> Legislators could consider taking a systematic approach to reviewing and revising a per line fee on a regular basis to ensure it keeps pace with inflation.

### *General Fund Appropriations*

The General Assembly could consider moving funding for the E-911 board to the General Fund, as recommended by a 2022 Agency of Administration report.<sup>33</sup> The argument for including 9-1-1 services in the General Fund connects with the idea that government services that benefit the “public good” should come from general tax revenues and that it is more appropriate to pay for services with a definable set of users, such as State parks, through user fees.

In its report, the Agency of Administration notes that, “Enhanced 911 services are among the most critical of functions performed by any government and, as such, should not be controlled by the market conditions of telecommunications activity. The Agency recommends that, beginning in Fiscal Year 2023, E911 activities be funded by the general fund to ensure the levels of service and protection Vermonters deserve.”<sup>34</sup>

However, a 2012 study of Vermont E-911 funding came to the opposite conclusion, instead proposing a structure that would determine a cost per 9-1-1 call and then charge each town based on the number of 9-1-1 calls made within its boundaries.<sup>35</sup> While these charges would be funded through general municipal

<sup>30</sup> An access line is a connection from an end user to the public switched network.

<sup>31</sup> “Surcharge Fee Calculation.” *Department of Emergency Services and Public Protection*. Accessed January 12, 2024. [https://portal.ct.gov/-/media/DESPP/DSET/911\\_Telecom\\_Fund/Surcharge\\_Rate\\_Calculation\\_FY23-24.pdf](https://portal.ct.gov/-/media/DESPP/DSET/911_Telecom_Fund/Surcharge_Rate_Calculation_FY23-24.pdf)

<sup>32</sup> JFO calculation using PCE Price Index data found here: <https://fred.stlouisfed.org/searchresults?st=pce+price+index>

<sup>33</sup> *Report Related to the Funding of Enhanced 911 Operations*. (Montpelier, VT: VT Agency of Administration, 2022). <https://legislature.vermont.gov/assets/Legislative-Reports/Report-Related-to-the-Funding-of-Enhanced-911-Operations-Pursuant-to-H.439-Sec-E.235-1-15-22.pdf>.

<sup>34</sup> *Report Relating to the Funding of Enhanced 911 Operations*. <https://legislature.vermont.gov/assets/Legislative-Reports/Report-Related-to-the-Funding-of-Enhanced-911-Operations-Pursuant-to-H.439-Sec-E.235-1-15-22.pdf>.

<sup>35</sup> *Emergency 9-1-1 Service Funding Study*. (Montpelier, VT: State of Vermont Enhanced 9-1-1 Board, 2012). <https://legislature.vermont.gov/Documents/Reports/274190.PDF>.

revenues, under this structure, 9-1-1 would operate much more like a service that is paid for in proportion to usage.

**Considerations:**

Rather than trying to assess the extent to which 9-1-1 services are a public good, a service, or some combination of the two, this report will discuss the advantages and disadvantages of funding E-911 services from the General Fund. On the one hand, the amount of revenue necessary for the E-911 board would be determined through the annual budget process, which would help ensure that the E-911 Board would receive enough funding to carry out their mission each year, rather than them to an amount of funding generated by a dedicated revenue source. On the other hand, E-911 would be placed in direct competition for funding against other operational and policy priorities also vying for limited General Fund dollars.

E-911 Board funding would represent a relatively small amount of the General Fund. In fiscal year 2023, the \$4.9 million E-911 Board budget would represent just 0.2% of overall General Fund revenues. However, while it would not represent a large budgetary item, a tight overall revenue environment could force the E-911 Board to be subject to the same uncertainties of the appropriations process that other agencies and departments face.

Ultimately, using General Fund dollars to fund the E-911 Board does not have to be an either or decision. As noted earlier in this report, the General Assembly has used \$5.125 million in General Fund dollars to support the E-911 Board since fiscal year 2021 (one fourth of the Board's budget during that time). The General Assembly could continue to partially fund VUSF through the General Fund to offset revenue shortfalls. Alternatively, a small per line charge or the current retail charge could be allocated to the General Fund to offset some of the costs of VUSF programs. This structure would mean that revenues are not directly connected with program costs, which allows for more flexibility and recognizes that universal service fund programs provide a public benefit.

## Alternative Structures

For simplicity, this report has thus far assumed that VUSF would retain its current programs and structure. However, the current structure places two different policy conversations – broadband and E-911 call-taking – together when trying to find long-term and sustainable funding. The current allocation of 1/6 of VUSF revenues to broadband means that any revenue increases to the Fund to support the E-911 Board would increase broadband funding as well.

Policymakers have two main options to decouple funding for broadband and E-911. Vermont is one of two states that fund E-911 services through its universal service fund and is the only state to fund the *entirety* of statewide E-911 through its universal service fund. Legislators could consider removing the E-911 Board from VUSF and implement two per line charges: one for VUSF and a one for E-911. Broadband funding could stay with the rest of the universal service programs in line with the federal definition of “universal service” – the principle articulated through legislation that all Americans should have access to communications services, including broadband.<sup>36</sup> The funding mechanism for this more narrowly focused VUSF could be a separate line fee, a percentage charge, or some combination of the two depending on service type.

The main advantage of decoupling the funding is to allow the General Assembly to better align revenues and expenses for both E-911 and broadband. With separate per line fees, any issues in E-911 funding or decisions to incorporate dispatch funding could be addressed separately from decisions about funding broadband.

Creating different charges for E-911 and other VUSF programs, however, also has disadvantages. First, it would inject more complexity into the current funding system by requiring that the General Assembly monitor two similar but distinct revenue sources. Consumers would also see two different charges on their phone bill. Second, a funding source solely dedicated to E-911 on a consumer’s phone bill would be subject to more federal scrutiny. Starting in 2021, the FCC instituted a new set of rules that require state-level E-911 funding to be used for 9-1-1 services. States using funds collected for E-911 through a dedicated charge on consumer phone bills now risk losing federal funding if the collected funds are not used exclusively for E-911.

Another option is to change or remove the allocation of broadband funding through VUSF. The broadband funding picture in Vermont has changed since 2019, when only three CUDs were operational and funding sources were limited. Since then, Vermont received a collective \$474 million in ARPA and federal Broadband Equity Access and Deployment (BEAD) funds for broadband. Against that sum, the addition of approximately \$800,000 per year from VUSF is marginal. Removing broadband funding from VUSF would alleviate some of the pressure to increase revenue for the Fund.

If funding for broadband stays within VUSF, it could potentially be used to offset the cost of broadband for lower income households and continue to support the goal of universal service. Although the federal Affordable Connectivity Program currently offers a discount of \$30 per month on qualifying broadband services, the program is scheduled to run out of funding in April 2024, which may leave customers in rural areas with higher monthly bills.<sup>37</sup> VUSF broadband funding could augment the existing State Lifeline program, which currently only offers a \$4.25 discount on telephone service. Strengthening the VT Lifeline program would support the federal definition of universal service, which promotes access to communications services, including broadband, at comparable rates in rural and urban areas.

<sup>36</sup> “Universal Service.” *Federal Communications Commission*. December 22, 2023. Accessed January 11, 2024. <https://www.fcc.gov/general/universal-service>.

<sup>37</sup> “Affordable Connectivity Program (ACP) Wind-Down Fact Sheet.” *Federal Communications Commission*. Accessed January 12, 2024. [https://www.fcc.gov/sites/default/files/ACP\\_Wind-down\\_Fact\\_Sheet\\_Final.pdf](https://www.fcc.gov/sites/default/files/ACP_Wind-down_Fact_Sheet_Final.pdf)

## Conclusion<sup>38</sup>

The Vermont Universal Service Fund is unique; no other state funds the entirety of statewide 9-1-1 call-taking services through its universal service fund. VUSF also relies on a revenue source that's experienced a decline in its base since fiscal year 2016. The result is an estimated fund deficit of at least \$2 million in fiscal year 2025 and at least \$3.3 million by fiscal year 2029. Because of the existing statutory funding order, the E-911 Board shoulders the entire impact of this funding shortfall.

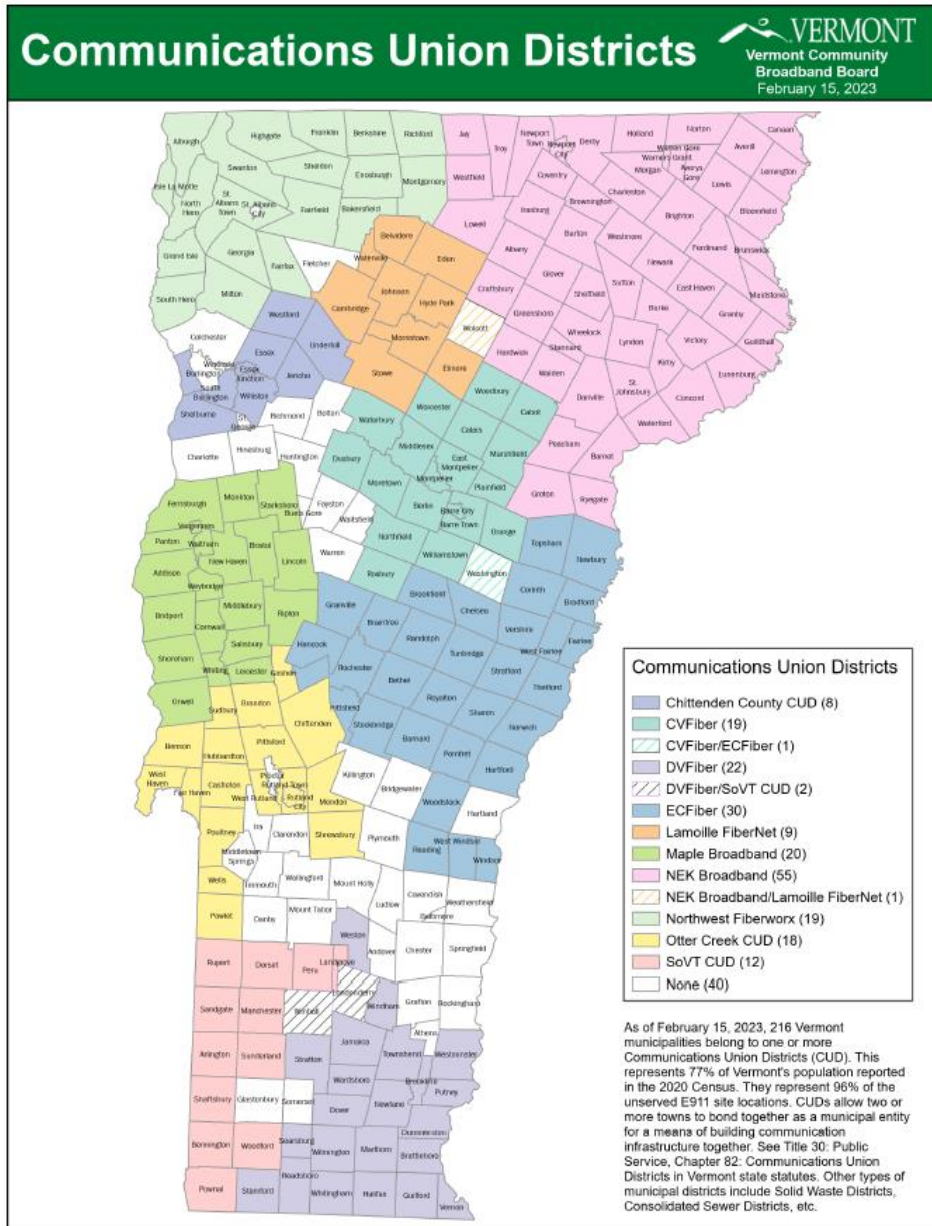
Alternative funding solutions include increasing the current retail percentage charge, replacing the current charge with a flat per line charge, or funding the E-911 Board partially or entirely through General Fund dollars. Each of these solutions present advantages and challenges that require scrutiny. While each option could be structured to provide enough revenue for VUSF long-term, the per line charge would leverage a more stable base and could be structured to mitigate some of the challenges that would come with this funding mechanism. The per line charge would also bring Vermont in line with most other states in the country, which also use per line fees to fund E-911 call-taking.

Further potential areas of modernization exist, including dedicating a sole funding source to E-911 and a separate source for universal service programs. The General Assembly could also revisit the funding for broadband within the VUSF, to ensure it meets the needs of CUDs and providers extending service to rural and underserved locations and those of the consumers paying for that service.

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<sup>38</sup> Since a portion of Vermont Universal Service Fund revenues are allocated to the Vermont Community Broadband Fund, JFO would like to disclose that Ted is the Williamstown Delegate to the CVFiber Governing Board and is also on the Finance Committee.

**Appendix A: Map of Areas Served by Communications Union Districts<sup>39</sup>**



<sup>39</sup> <https://publicservice.vermont.gov/vt-community-broadband-board-vcbb/vermont-communications-union-districts>

## Appendix B: Selected Definitions

**Broadband:** Per the FCC, internet services need to provide speeds of 25 mbps download and 3 mbps upload (25/3) to be classified as broadband

**Dispatch:** An agency that sends out appropriate public safety personnel based on call information from the E-911 call-taking service

**Enhanced 911 (E-911):** Enhanced 911 is an emergency call-taking system that provides caller location information to the call-taker responding to the call, allowing for more accurate and rapid response.

**Last-mile broadband:** The final routing of physical infrastructure that connects a home or business to a broadband network.<sup>40</sup>

**Megabit per second (mbps):** Measures how many one million bit packages (about the size of a small picture) of data could be downloaded or uploaded by an internet service per second. Mbps is the main measurement of internet speed.

**Next Generation 911 (NG-911):** Moves emergency call-taking from an analog to digital internet protocol (IP) networks. NG-911 networks allow for people in emergency situations to send texts, pictures, video, and improved location information.<sup>41</sup>

**Public Service Answering Point (PSAP):** A facility that has been designed to receive emergency calls and route them to emergency service personnel.<sup>42</sup>

**Telecommunications Relay Service (TRS):** Helps people with hearing or speech disabilities place and receive telephone calls.<sup>43</sup> TRS has the following options:

*Text to Voice Teletypewriter:* An operator facilitates a text-based phone call between the caller (using text) and the phone call recipient (using voice).

*Speech to Speech Relay Service:* Used by a person with a speech disability. An operator specially trained in understanding a variety of speech disorders repeats what a caller says in a manner that makes the caller's words clear and understandable to the called party.

*Shared non-English language relay services:* Interstate TRS providers must offer Spanish to Spanish traditional (Text-to-Voice TTY) TRS.

**Universal Service:** Goal advanced through federal legislation of affordable, nationwide telecommunications (phone and broadband) service available at comparable rates for both urban and rural consumers<sup>44</sup>

**VoIP (Voice over Internet Protocol):** A technology that allows you to make voice calls using a broadband internet connection instead of a regular (or analog) phone line.<sup>45</sup>

<sup>40</sup> In some cases, last-mile refers to underserved addresses that are costly to add to broadband networks and are thus, the last mile of service completed by providers

<sup>41</sup> <https://www.911.gov/issues/ng911/>

<sup>42</sup> [https://www.law.cornell.edu/uscode/text/47/222#h\\_4](https://www.law.cornell.edu/uscode/text/47/222#h_4)

<sup>43</sup> Both the telephone relay service overall definition and the definitions of the different subtypes can be found at <https://www.fcc.gov/consumers/guides/telecommunications-relay-service-trs>

<sup>44</sup> <https://www.fcc.gov/general/universal-service-fund>

<sup>45</sup> <https://www.fcc.gov/general/voice-over-internet-protocol-voip>