State of Vermont Enhanced 911 Board

911 Tariff Study 2024

January 2025

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Contents

1 Executive Summary

The Vermont Enhanced 911 Board commissioned this 911 Tariff study in compliance with **Act No. 143 (S.310)**, which pertains to government response, recovery, and resiliency in the face of natural disasters. This act was signed into law by the Governor on May 30, 2024.

Specifically, **Section 20 of the act** mandates that the Enhanced 911 Board report to the House Committee on Government Operations and Military Affairs and the Senate Committee on Government Operations by January 15, 2025. The report is to focus on current local exchange telecommunications tariffs, particularly evaluating existing tariffs permitted under **30 V.S.A. § 7055**, determining actual costs for service provision, and comparing these tariffs to similar cost recovery mechanisms in other states.

In August 2024, following a competitive procurement process, the Enhanced 911 Board selected 911 Authority, LLC, to conduct a comprehensive study to comply with **Act 143**. The project commenced in earnest in August 2024 and continued through December 2024, during which relevant data was collected, input on 911 tariffs was sought from Vermont local exchange carriers, and Vermont's 911 tariffs were compared to those of other states, as required by the act. This study provides detailed analysis and findings regarding Vermont's 911 tariffs, along with recommendations for the Enhanced 911 Board, summarized as follows:

1.1 Findings

1. **Stagnation of Vermont 911 Tariffs**: With the exception of Consolidated Communications Inc. (CCI), Vermont's 911 tariffs have remained unchanged since 1995. All 911 service providers in the state indicated in responding to our information survey that no tariff changes are necessary in 2024, asserting that their costs are adequately covered by existing tariffs. Additionally, they noted that the expense of re-determining costs for tariffed services is prohibitive.

   Current Tariff Structure Focus:
   - Vermont’s existing 911 tariff structure is primarily based on traditional telecommunications costs, which include charges for Automatic Location Identification (ALI) databases and 911 trunking.

   Relevance of Traditional Tariffs:
   - The current tariff model does not accurately reflect the modern communication landscape, where Voice over Internet Protocol (VoIP) and wireless calls have become predominant. As the number of wireline subscribers continues to decline, there is a pressing need to reassess the relevance and applicability of these traditional tariffs.

   ALI Tariff Costs are Disproportionate:
   - Comparison of 2011 incurred ALI tariff costs to 2023 incurred ALI tariff costs indicates costs increasing while record counts are decreasing which increases the overall outlay for maintaining ALI records in the state. There is a

disproportionate outlay for maintaining the regional provider ALI records when examining the costs to the state.

2. **Comparative Analysis Limitations**: While comparing Vermont's 911 tariffs to those of other states is relevant, it is important to note that most states have moved away from using 911 tariffs to recover service provider costs. The regulatory landscape at federal, state, and local levels has also shifted away from reliance on 911 tariffs.

   Identified Gaps and Limitations:

   - The existing tariff model does not adequately account for the technological advancements and associated costs of implementing Next Generation 911 (NG911) systems. Several states, including Colorado, North Dakota, South Dakota, and Texas, have moved away from tariffing ALI database charges, opting instead to include these costs into service contracts. This trend highlights a gap in Vermont's approach, which remains tied to legacy tariffs.

3. **Call for 911 Tariff Reassessment:** The analysis suggests the need for a comprehensive reassessment of Vermont's 911 tariff structure to ensure it meets the demands of contemporary communication technologies and service delivery. This reassessment should consider the integration of advanced technologies and the shifting patterns of communication to create a more responsive and effective 911 service framework.

   Consider the Recent FCC Orders if Changes are Made:

   - Consideration should be given to the recent FCC Orders facilitating the implementation of Next Generation 911 (NG911) (PS Dockets 21-479 and 18-64). These orders affect certain costs related to 911 services, some of which may fall under current 911 tariffs, including the 911 trunk tariffs.

2 Introduction

The Vermont Enhanced 911 Board previously commissioned a tariff study conducted by Magellan Advisors in 2011. This report highlighted significant changes that occurred between 1995, the filing year of most Vermont E911 tariffs, and 2011. Key developments included the introduction of Enhanced 911 (E911) in 1999, the advent of Next Generation 911 (NG911), and a marked shift towards wireless calling.

The 2011 report focused on tariffs related to Automatic Location Identification (ALI) databases and 911 trunk costs, which are essential for delivering 911 calls to the appropriate Public Safety Answering Point (PSAP). 911 Authority was tasked with updating the 2011 report and advising the Board of the findings of their study.

Our approach to this study included the 2011 study as a benchmark but expanded the study to include:

- **Advancements in 911 Technologies**: The study explores how recent developments in 911 technologies, particularly Next Generation 911 (NG911) systems and Emergency Services Internet Protocol Network (ESInet), have influenced the landscape of telecommunications services and associated costs.
- **Regulatory Changes**: Consideration of how changes in regulations governing telecommunications and emergency services may have affected the pricing structures and tariffs associated with these services.
- **Evolving Costs**: Assesses the impact of evolving costs related to both traditional telecommunications services and the newer 911 systems. This includes an examination of whether the costs associated with traditional services have been replaced or altered due to advancements in 911 technologies.
- **Comparison of Services**: Juxtaposing Vermont's NG911/ESInet framework with traditionally tariffed telecommunications services. This comparison is vital for understanding the current appropriateness of existing tariffs.
- **Evaluation of Tariffs**: Evaluate whether existing tariffs accurately reflect the costs of providing emergency services in light of technological advancements. This includes determining if some tariffs may represent component costs of service contracts rather than traditional service costs.
- **Implications for Stakeholders**: Engagement and review of stakeholder comments which could have significant implications for various stakeholders, including telecommunications providers, and regulatory bodies as they navigate the evolving landscape of emergency communication services.
- **Future Research Directions**: Highlight areas for future research, particularly in understanding the long-term impacts of NG911 technologies on service delivery and cost structures within the telecommunications industry.

3 Study Methodology

This study involved an extensive review of Vermont's 911 tariff structures, building upon the 2011 Magellan Report. We reviewed tariffs from multiple states and analyzed how pricing and cost structures vary depending on state and federal laws.

Research involved detailed tariff reviews across multiple states, though the process was time-intensive due to the length and complexity of documents. Fortunately, many tariffs were publicly available, though differences in presentation and accessibility complicated the review. Additional data was gathered to update the analysis with the relevant costs and services. The following 16 state tariffs were reviewed as part of this analysis.

Arkansas	**Colorado**
Florida	**Iowa**
Kansas	**Maine**
Missouri	**Montana**
N Carolina	**New Hampshire**
New York	**Oklahoma**
Oregon	**Pennsylvania**
Vermont	**Virginia**

In addition to the tariff analysis, 911 Authority conducted a survey of the primary stakeholders within the State of Vermont. The survey asked the RLECs and ILEC within the state questions specific to the delivery of 911 services while focusing on how those services are designated by tariff.

The NG911 Contract with INdigital was also used for some of the analysis but was unbound by the tariff rates of the RLECs and ILEC due to the nature of the NG911 configuration.

4 Comparative Analysis

There are two types of 911 tariffs that exist in Vermont:

- **Automatic Location Identification Database Tariffs**
- **911 Trunk Tariffs**

An ALI Database tariff filed by a phone company specifies the rates, and terms for maintaining and accessing the ALI database, which is crucial for Enhanced 911 (E911) systems. The ALI database stores and retrieves location information associated with the wireline caller's phone number during a 911 call, allowing emergency responders to quickly identify and locate the caller, even if the caller is unable to provide location details.

911 trunk tariffs are the recurring fees charged by service providers to connect to the public emergency telephone network (PSAP - Public Safety Answering Point) so their subscribers can make 911 calls.

Our research involved comparing 2011 ALI DB tariff costs with 2023 ALI DB tariff costs while also examining existing 911 ALI DB tariffs across multiple jurisdictions, similar to the approach taken in

the 2011 Magellan report. We also compared 911 Trunk tariffs in VT to the 911 Trunk tariffs in other states.

Comparing tariffs across states can be insightful, but it is crucial to interpret these comparisons cautiously. Factors such as state and federal laws, cost recovery regulations, and varying provider costs can significantly influence tariff structures and pricing. Therefore, direct comparisons may not always provide a complete picture without considering these nuances.

4.1 Comparing 2023 911 ALI Tariff Costs to 2011 ALI Tariff Costs

The 2011 report provided a comprehensive overview of the Vermont companies charging for ALI database record updates and provided analysis based on actual provider billings. The table below is reproduced from the 2011 report with additional columns added to show the Percentage of Total Records updated by provider and Percentage of Total Costs submitted for each provider. It is also important to note that the 2011 study data focused on 6 months of actual costs incurred under tariff in Vermont. Relevant comparison factors include the total number of records processed in the 2011 six month totals and the six month costs associated with those record updates.

2011 Aggregated 6 Month ALI DB Totals					
Company	**2011 Charges**	**2011 Updated Records**	**2011 Cost Per Record**	**Pct Total Records**	**Pct Total Cost**
Burlington Telecom	$ 2,320.00	747	$ 3.11	0.44%	4.61%
Fairpoint	$ 8,412.00	153,757	$ 0.05	91.08%	16.73%
Fairpoint Classic (Northland)	$ 8,004.00	1,761	$ 4.55	1.04%	15.92%
Franklin	$ 1,798.00	126	$ 14.27	0.07%	3.58%
Shoreham	$ 6,090.00	841	$ 7.24	0.50%	12.11%
TDS	$ 7,250.00	1,927	$ 3.76	1.14%	14.42%
Topsham	$ 3,480.00	221	$ 15.75	0.13%	6.92%
Vtel	$ 5,800.00	5,601	$ 1.04	3.32%	11.53%
Waitsfield Champlain Valley	$ 7,134.00	3,834	$ 1.86	2.27%	14.19%
Totals	**$ 50,288.00**	**168,815**	**$ 0.30**		
AVG	**$ 5,587.56**	**18,757.22**	**$ 5.74**		

Table 1-2011 Aggregated 6 Month ALI Costs

From the 2011 study information in the table above the following observations are made

- **Total records updated** **168,815**
- **Total cost for updates over 6 months** **$50,288**
- **Percentage of Records attributed to FairPoint, now CCI** **91.08% of all records**
- **Percentage of Records attributed to all other VT providers** **8.98% of all records**
- **Percentage of Costs attributed to FairPoint/CCI** **16.73% of total costs**
- **Percentage of Costs attributed to all other VT providers** **83.27% of total costs**
- **Calculated cost per record including FairPoint/CCI** **$0.30/record**
- **Average cost per record is calculated as** **$5.74/record**

In Vermont, the daily recurring costs for ALI updates for all providers, with the exception of Consolidated Communications, are set at $58 per update file. In contrast, Consolidated Communications imposes a negotiated monthly charge of $1,402 due to the larger record count maintained by Consolidated Communications.

For this study, all submitted ALI record invoices submitted for 2023 were compiled together and similar calculations were made in order to allow for comparison to the costs reported in the 2011 study. While it is important to keep in mind that the 2011 study aggregated six months of costs and the 2023 data is for 12 months, the relevant comparisons can still be done, and conclusions can be reached based on the differences observed between the data sets.

2023 Aggregated 12 Month ALI DB Totals					
Company	**2023 Charges**	**2023 Updated Records**	**2023 Cost per record**	**Pct Total Records**	**Pct Total Cost**
CCI	$ 16,824.00	79,795	$ 0.21	86.0%	15.80%
CCI-Northfield	$ 5,104.00	696	$ 7.33	0.75%	4.79%
Franklin	$ 4,118.00	373	$ 11.04	0.40%	3.87%
Shorham	$ 12,122.00	1,154	$ 10.50	1.24%	11.38%
TDS (Ludlow, Northfield and Perkinsville)	$ 30,276.00	2,202	$ 13.75	2.37%	28.43%
Topsham	$ 9,222.00	323	$ 28.55	0.35%	8.66%
Vtel	$ 14,674.00	3,299	$ 4.45	3.56%	13.78%
Waitsfield	$ 14,152.00	4,894	$ 2.89	5.28%	13.29%
Totals	**$ 106,492.00**	**92,736**	**$ 1.15**		
AVG	**$ 13,311.50**	**11,592**	**$ 9.84**		

Table 2-2023 Aggregated 12 Month ALI Costs

Based on the 2023 cost data presented in the table above, several key observations can be drawn:

• **Total records updated**	**92,736**
*This figure indicates a **decrease** in updated records from 2011 vs 2023*	
• **Total cost for updates**	**$106,492**
*This amount indicates an **increase** 2011 vs 2023 when annualizing 2011 or reducing 2023 costs to 6 months*	
• **Percentage of Records attributed to FairPoint, now CCI**	**86% of all records**
*This percentage indicates a **decrease** in updated CCI records 2011 vs 2023*	
• **Percentage of Records attributed to all other VT providers**	**14% of all records**
*This percentage indicates an **increase** 2011 vs 2023*	
• **Percentage of Costs attributed to FairPoint/CCI**	**15.8% of total costs**
*This percentage indicates a **decrease** 2011 vs 2023*	
• **Percentage of Costs attributed to all other VT providers**	**84.2% of total costs**
*This percentage indicates an **increase** 2011 vs 2023*	
• **Calculated cost per record including FairPoint/CCI**	**$1.15/record**
*This amount indicates an **increase** 2011 vs 2023*	
• **Average cost per record is calculated as**	**$9.84/record**
*This average indicates an **increase** 2011 vs 2023*	

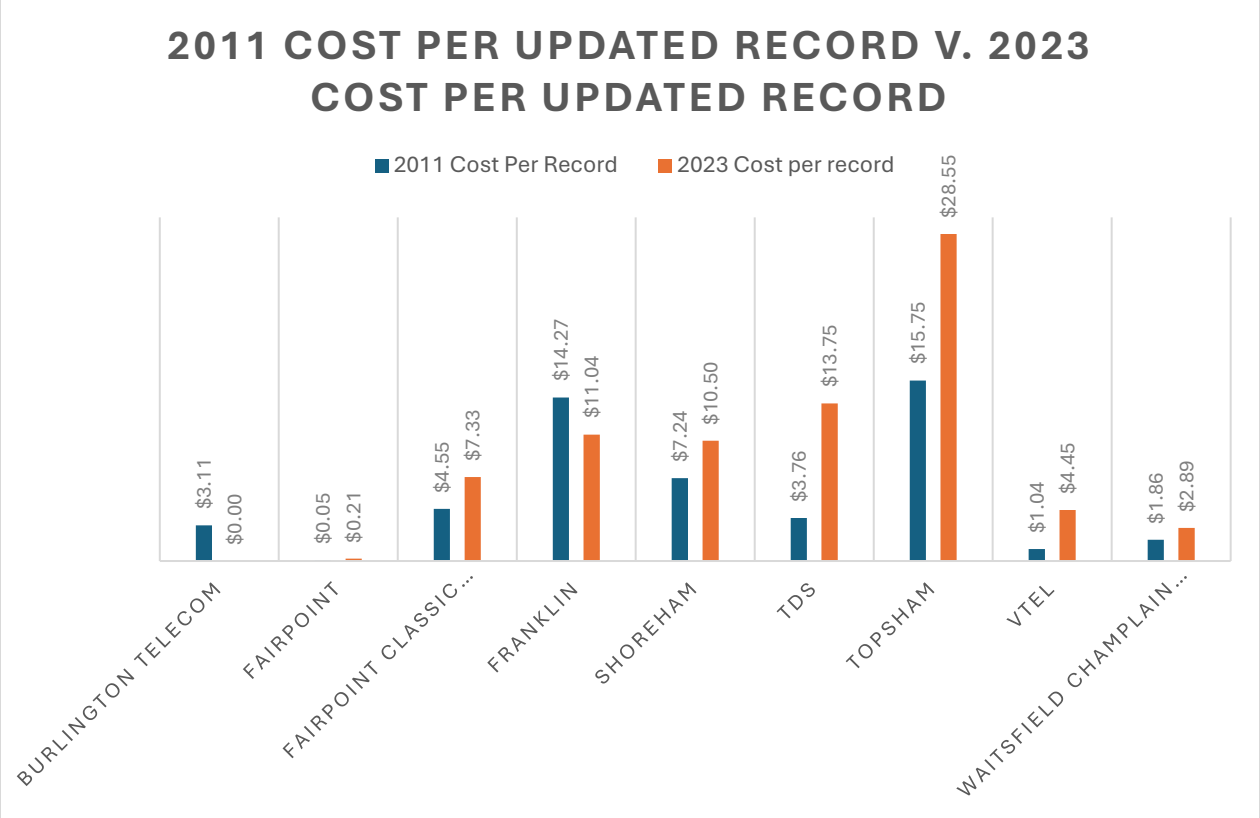

Figure 1-Comparison of Costs to Update ALI Records in 2011 vs 2023

Conclusions Drawn from Comparing the 2011 and 2023 Data

The comparison between the 2011 and 2023 data allows for several important conclusions:

1. **Decrease in Updated ALI Records:**
   The overall number of ALI records updated in 2023 has decreased significantly from 2011. This trend aligns with the broader shift from traditional landline and legacy telephone technologies towards Voice over Internet Protocol (VoIP) and wireless communication methods, which typically do not rely on traditional ALI systems.
2. **Increased Tariff Costs:**
   The tariff costs to the Board have risen on a per-record basis from 2011 to 2023. This phenomenon occurs as the number of records needing maintenance has declined without an equivalent reduction in costs, suggesting a need to re-evaluate cost structures.
3. **Negotiated ALI Tariff Rate with CCI:**
   The negotiated ALI tariff rate with CCI, while higher in total, appears reasonable in light of the volume of records they manage. This suggests that CCI's pricing reflects the realities of their operational overhead.
4. **Established Tariff Rate for Other Providers:**
   The 1995 tariff rate of $58 per update file for all other Vermont providers now appears increasingly unreasonable. Notably, 2023 data reveals that 84.2% of costs are being incurred to maintain just 14% of the ALI records in the state. This discrepancy clearly indicates that the existing tariff does not accurately represent the current cost landscape.

Recommendation for Future Consideration

Based on the analysis of 2011 ALI tariff costs in relation to 2023 values, combined with the overall decrease in ALI records requiring maintenance, a compelling case exists for the Board to pursue a strategy aimed at reassessing the current rate of $58 per update file. It is both logical and reasonable to suggest that as fewer records necessitate maintenance, the associated costs should also diminish. Therefore, an in-depth evaluation of the tariffs established in 1995 is warranted, particularly as these figures may no longer reflect the operational realities facing service providers in 2024.

4.2 911 ALI Tariff Comparisons to Other States

Research conducted for this study indicates that some states have already eliminated or bundled ALI database charges within other tariffs. Additional data was added to illustrate rates and services relevant to this study. See the table below. Our research and comparisons found substantive differences in the "per record" costs for ALI database updates when comparing Vermont to other jurisdictions. However, the evolving 911 technology landscape warrants a closer examination of Vermont's ALI database tariff, considering the declining need for ALI record updates and the approaches taken by other states.

Our research indicates that the costs associated with maintaining tariffs for ALI database updates have become increasingly irrelevant in the context of modern communication technologies. As wireless and VoIP technologies have become the primary means of call routing, the reliance on traditional ALI database updates has diminished. This shift raises concerns about the sustainability of Vermont's current tariff model, suggesting that the continued use of these tariffs may lead to unnecessary expenditures that do not align with the actual needs of the emergency response system.

State	Provider	Service	Rate	Type	Tariff Date
Arkansas	Brightspeed	ALI	$0.315	Per record	3/30/2023
Colorado	Verizon	ALI	$0.539	Per record	11/15/2016
Florida	CenturyLink	Bundled services	$0.12[1]	Bundled	4/22/2014
Kansas	AT&T	Customer records	$.0425	Per record	
Maine	FairPoint	Database update	$.047	Per record	
Maine		Annual audit	$.01	Per record	
Missouri	AT&T	E911 DB[2]	$32	Monthly	
Montana	CenturyLink		$.027[3]		
N Carolina	Verizon	Subscriber Records	$.0482	Per access line	
New Hampshire	RLECs[4]	Database update	$58/Update file	As incurred	1995
New Hampshire	Consolidated Communications [5]	Database update	$1,402	Monthly	2019
New York	Verizon	ALI/DBMS	$0.03	Per record	5/1/2014
Oklahoma	AT&T	ALI[6]	$60 / $ 50 / $40/M		5/1/2013
Oregon	CenturyLink	ALI data	$0.31	Per record	3/1/2015
Vermont	Consolidated Communications	ALI DBMS	$1,402	Monthly	2019
Vermont	RLECs	DB Update	$58/Update file, AVG per record $9.84 in 2023	As incurred	1995
Virginia	Brightspeed	DB maintenance	$0.047	Per record	4/20/2023
Virginia	Verizon	ANI/ALI[7]	$0.135	Monthly	11/8/2016

Table 3-Comparative ALI Tariff Rates

Vermont's tariffed rate per record for ALI database updates is significantly higher than the jurisdictions reviewed as part of this study as evidenced by the information provided in the table above.

4.3 911 Trunk Tariff Analysis

Independent telephone companies in Vermont bill E911 interexchange trunks using a three-part rate structure of mileage (per mile), circuit termination type, and mileage (fixed), in concert with meet

[1] Bundled services (ANI, ALI, SR) $1,270/1000 for service establishment, $730/1000 nonrecurring and $120/1000/month; without SR, same nonrecurring costs and $93/month/1000 recurring.
[2] Bundled service is part of selective routing and a basic feature package.
[3] Tariff does not include ALI charges alone. ALI is included in bundled rates: $.27 / access line, counties > 35K is $.20, if population density is > 48 square mile $.20.
[4] RLECs comprise Franklin, Topsham, et al. Tariff information dates to 1995. These companies have not been required to file tariffs since 2012.
[5] Acquired FairPoint in 2017. FairPoint FCC tariffs were canceled effective 5/1/2018.
[6] Charges include Selective Routing and other charges. DBMS alone is an obsolete charge.
[7] Bundled service includes ANI, ALI and Selective Routing. Tariff rate is lower for non-company-maintained databases, $0.118; and for customer-maintained databases: $0.124

point billing such that each company bills its own charges for its portion of the circuit. Current 911 trunk tariff costs in Vermont breakdown as follows.

Rural Local Exchange Carrier (RLEC)	Number of 911 Trunks	Monthly Charge
Consolidated Comm. d/b/a Northland Telephone	12	$242.50
Consolidated Communications		$0.00
Franklin Telephone	4	$146.31
Shoreham Telephone	4	$173.00
TDS - Ludlow Telephone	8	$165.96
TDS - Northfield Telephone	4	$82.99
TDS - Perkinsville Telephone		$0.00
Topsham Telephone	4	$159.73
Vermont Telephone	8	$293.22
Waitsfield Telecom	8	$672.68
Monthly Total		$1,936.39
Yearly Total		**$23,236.68**

Table 4 - Current 911 Trunk Tariff Charges

It should be noted that these 911 Trunk tariff charges remain unchanged from the charges documented in the 2011 Magellan study. However, a new cost has been introduced by Consolidated Communications for the aggregation and transport of all Vermont RLEC 911 traffic to the INdigital NG911 system.

Current 911 trunk tariffs cover the legacy connection of the RLECs to Consolidated facilities. Consolidated Communications uses a negotiated rate of $8,400 per month as part of the NG911 contract with INdigital. This charge represents the cost to aggregate and transport all VT RLEC 911 traffic from CCI facilities to the NG911 interconnections points. This is in addition to the RLEC tariff charges reflected in the table above.

Combining the costs, RLEC 911 trunk tariffs and CCI aggregation, brings the annual cost for delivering 911 calls from the RLECs to **$124,036.68 per year**.

Comparisons with other states 911 trunk tariffs included a look at how ILEC and RLEC rates compare for similar services. The table summarizing these costs can be found in the appendix. While informative, we ultimately determined that the information in the table is not germane to the Vermont tariff analysis. It is difficult to offer a direct comparison to Vermont because tariffs and tariffed rates are specific to each State. Tariffs can also differ in terminology, scope, cost metrics, and are dependent upon rate cases within a specific state and at the federal level. However, our analysis and

comparison of 911 trunk tariffs in other states identified a trend, the elimination of 911 tariffs and offers a consideration for the Board.

- **Other States Have Eliminated 911 Tariffs**: A notable trend among several states, including Colorado, North Dakota, South Dakota, and Texas, is the elimination of tariffs for specific 911 services. Instead of maintaining separate charges, these states have opted to bundle costs into larger service contracts or have transitioned to funding models that are compatible with Next Generation 911 (NG911) systems. This shift not only simplifies the billing process but also aligns funding with the actual costs of providing modern emergency services, thereby enhancing efficiency and responsiveness.

Additionally, the recent FCC orders detailed in Section 5 could impact 911 trunk tariffs in the following ways.

Analysis of Potential Impacts of FCC Orders PS Docket 21-479 and PS Docket 18-64 on Legacy 911 Trunk Tariffs

The Federal Communications Commission (FCC) issued Report and Order PS Docket 21-479 and PS Docket 18-64 in 2024 to facilitate the implementation of Next Generation 911 (NG911) services. These orders aim to modernize emergency calling services by transitioning from legacy phone lines to an IP-based system that supports voice, text, video, and data communications. This transition has significant implications for legacy 911 trunk tariffs, which are the fees charged for connecting 911 calls from traditional phone lines to emergency call centers.

Potential Impacts

1. **Tariff Reclassification:** The orders could lead to a reclassification of 911 trunks from legacy Time Division Multiplex (TDM) phone lines to IP-based connections. This reclassification could potentially place 911 trunks under different tariffing rules or even remove them from the scope of traditional tariffing altogether.
2. **Tariff Reduction or Elimination:** The FCC's emphasis on facilitating NG911 implementation and ensuring affordable access to emergency services could put pressure on reducing or even eliminating 911 trunk tariffs. This is because high tariffs could hinder the transition to NG911 and create barriers to efficient emergency response.
3. **Increased Transparency:** The orders may require increased transparency in the cost structures of 911 services, including the tariffs associated with legacy trunks. This could lead to greater scrutiny of these tariffs and potentially drive them downwards.
4. **Regulatory Uncertainty:** The transition to NG911 and the evolving regulatory landscape could create uncertainty around the future of legacy 911 trunk tariffs. This uncertainty may impact investment decisions and the long-term planning of emergency service providers.

Could 911 Trunk Tariffs be Negated by These Orders?

While the orders do not explicitly negate 911 trunk tariffs, they create a regulatory environment that could lead to their eventual elimination. The FCC's focus on IP-based NG911 infrastructure, coupled with the need for affordable and efficient emergency services, suggests that legacy tariffs may

become obsolete or significantly reduced over time. The FCC orders PS Docket 21-479 and PS Docket 18-64 have significant implications for legacy 911 trunk tariffs. While these tariffs may not be immediately negated, the orders set in motion a transition to NG911 that could eventually lead to their reduction or elimination. The evolving regulatory landscape and the need for cost-effective emergency services will likely shape the future of 911 tariffs in the coming years.

4.4 911 Tariff Stakeholder Feedback and Input Survey Responses

Stakeholder Engagement

- **Feedback Collection**: Feedback was gathered from a diverse group of stakeholders, including telecommunications providers, Board staff, and other state entities. This inclusive approach ensures that the perspectives of those directly involved in the provision and regulation of 911 services are considered in the decision-making process.
- **Support for NG911 Transition**: Telecommunications providers expressed support for transitioning to fee structures that are compatible with NG911. This support indicates a recognition of the need for modernization in the funding system, as providers understand that adapting to new technologies is essential for improving service delivery and operational efficiency.

Responses from the Vermont Public Utility Commission (VT PUC) and the Public Service Department align with our expectations and those of their peer agencies in other states. The VT PUC noted that the Enhanced 911 Board may file a complaint with the Commission should any tariff changes be contemplated.

Part of our review included VT PUC Dockets 5794 and 5795. The VT PUC identified several concerns in Dockets 5794 and 5795. One concern illustrates how changes in 911 technologies and communications would substantially differ from the analysis conducted in 1995 that was used to establish the current 911 tariffs. The implementation of an NG911 network utilizing IP replaces selective routing, rendering the costs of selective routing irrelevant. The 1995 tariffs also predate the FCC's King County decision (FCC Docket 94-102, adopted May 14, 2002), which established selective routers as the cost demarcation point for using 911 fees to support the implementation of wireless 911 call routing to appropriate PSAPs. Subsequent FCC regulations also supersede aspects of the 1995 tariffs to the extent that 911 fees are used to pay for 911 service costs.

The VT PUC speculated that updating the E911 tariffs, and implied deregulation, may increase E911 rates. The Public Service Department did not identify any basis for it to act, nor had it taken action, regarding E911 tariffs. We find both agencies' responses typical and consistent with their peer agencies in other states.

Survey responses from the RLECs and Consolidated Communications align with the response from the VT PUC. Dockets 5794 and 5795 resulted in rates that have not been modified since 1995. Complete cost data was not available from NYNEX in 1995, and no cost data was provided by the independent telephone companies at that time. Nor did the companies indicate that E911 cost data is available today. We may only conclude that the companies do not believe it worthwhile to undertake the cost study work necessary to support a contested case filing or a change to existing 911 tariffs.

5 Recent FCC Order Analysis

The FCC's July 2024 Report and Order aims to accelerate the transition to Next Generation 911 (NG911) in the United States. It combines elements from two dockets (PS Docket 21-479 and 18-64) to address both NG911 implementation and improve location-based routing for wireless 911 calls.

5.1 Facilitating Implementation of NG911 (PS Docket 21-479 and PS Docket 18-64)

Key Aspects:

- **NG911 Transition**: Establishes the first national rules for transitioning to NG911, outlining responsibilities and deadlines for various phone service providers (landline, wireless, internet-based).
- **Phased Approach**: Introduces a phased approach for implementing NG911, requiring providers to meet specific milestones in delivering 911 calls to NG911 systems.
- **Intercarrier Compensation**: Addresses how phone companies will be compensated for transmitting 911 calls over IP networks, ensuring a smooth financial transition.

Location-Based Routing:

- **Improved Accuracy**: Requires wireless providers to enhance the accuracy of location information sent with 911 calls, crucial for faster emergency response.
- **Timeline for Compliance**: Sets deadlines for wireless providers to implement location-based routing for voice calls and Real-Time Text (RTT) communications used by individuals with hearing or speech disabilities.

Overall Impact:

- **Modernizes Emergency Services**: This order pushes the U.S. towards a more modern, reliable, and efficient emergency response system.
- **Enhances Public Safety**: By improving call routing, location accuracy, and enabling multimedia capabilities, NG911 will help save lives and enhance public safety.
- **Clear Expectations**: The order provides clear guidelines and timelines for the industry, facilitating a coordinated transition to NG911.

One of the major changes resulting from the recent FCC Order is that OSPs are required to deliver 911 call traffic to a point of interface (POI) / interconnection on the State's network. The FCC's Order and new rules parallel the King County Decision, which divided responsibilities for 911 costs between service providers and governments (i.e., PSAPs' jurisdictions) at the selective router. Hence, the Order establishes a model for determining points at which 911 funding may be used; that point is the POI. 911 Authorities are responsible for the POI and costs of delivering call traffic from a POI to the appropriate PSAP. Providers are responsible for the costs of delivering call traffic to the POI.

It is our understanding that Vermont has achieved this through its NG911 system and services contract with INdigital. Tariffed rates for the "backhaul" of telecommunications traffic have resulted in significant costs in some jurisdictions. The FCC Order seeks to eliminate such costs by furthering the development of SIP and NG911.

The order finds that OSPs originating 911 traffic in Time Division Multiplex (TDM) should be responsible for translating such traffic to SIP when delivering it to a POI and, if necessary, to contract with a third party to translate the traffic to SIP. RLECs in rural/remote areas, such as those found in Vermont, may face limitations not found in urban areas and therefore may have an extended time for compliance in phases 1 and 2. 911 Authorities may agree with OSPs to alternative timelines for compliance with the NG911 requirements. Hence, parties may seek to modify compliance timelines through negotiation.

It is important to distinguish between contracts between 911 Authorities and ESInet providers and negotiations between 911 Authorities and OSPs: the Order only affects OSPs, as the FCC declined to address ESInet contracts. The Commission noted potential hypothetical scenarios that may arise among 911 Authorities, ESInet providers, and OSPs, and the potential for 911 Authorities to contract in a manner differently than the NG911 rules as permitted by 47 CFR 9.34.

As with other FCC Orders, the Commission specifically stated that the rules do not modify a state PUC's regulation of services, including cost recovery for such, when the services are intrastate. The rules only govern the manner in which OSPs provide 911 services and their responsibilities for transmitting their subscribers' 911 calls. Hence, an OSP may continue to use TDM up to the POI but must affect delivery at the POI as SIP traffic. OSPs may elect to address cost recovery issues at the state PUC, as such bodies have the authority to regulate OSPs' cost recovery.

6 Conclusions and Recommendations

Conclusion and Recommendations

- **Reassess and Modify 911 Tariffs**: Recommendation is for a comprehensive reassessment of existing 911 tariffs, particularly those that are no longer relevant to modern telecommunications. This may involve phasing out or consolidating certain tariffs, such as those related to ALI databases, which have become less critical and more costly within the current tariff rate structure and in the context of contemporary communication technologies. By streamlining the tariff structure, Vermont can reduce administrative burdens and better allocate resources to essential services.
- **Evaluate 911 Tariffs in the Context of NG911 Costs**: Future contracts for NG911 services should clearly differentiate between tariffed and non-tariffed costs. This transparency will facilitate better cost comparisons across different service providers and enhance accountability in the funding process. By establishing clear guidelines for cost evaluation, Vermont can ensure that it is making informed decisions that reflect the true costs of providing modern emergency services.
- **Consider Recent FCC Rulings in Contemplating Changes**: The recent orders from the FCC (PS Docket 21-479 and PS Docket 18-64) should guide the Board in any reconsideration of the current 911 tariffs. The rulings may affect both ALI tariff charges and 911 trunk tariff charges in a NG911 environment. The rulings provide a means and a method by which the Board can work with the RLECs and ILEC to adjust costs and realign responsibilities in the context of a NG911 environment that operates in Vermont.

In summary, the analysis of Vermont's 911 tariff system reveals a need for modernization and reassessment in light of evolving communication technologies, recent FCC actions and NG911 funding models. By addressing the identified gaps and limitations in the current tariff structure, engaging stakeholders, and implementing the recommended changes. This proactive approach will not only enhance the efficiency of the 911 system but also ensure that it meets the demands of contemporary 911 communication landscapes, benefiting the residents and visitors of Vermont.

7 Appendices

7.1 Appendix A 911 Trunk Tariffs from Other States

The table below provides a summary example of 911 Trunk tariffs from other states. This information was used to analyze the current Vermont 911 trunk tariffs, but also provides an example of how different 911 trunk tariffs are across the country, thereby making direct comparisons between states problematic.

State	ILEC	Service	"Flat Rate"	Tariff Date
Arkansas	AT&T	End Office to Control Office to PSAP or Direct Trunking	$155/$110/$145	10/1/2013
Arkansas	Brightspeed[8]	Direct Trunk End Office to PSAP	$93/$50[9]	3/30/2023
Arkansas	Brightspeed	Control Office to PSAP	$122	3/30/2023
California[10]	Various	911 Trunk	$500	6/8/2019
Iowa[11]	Qwest	E911 Data Transport, Data Circuit	$11.64	7/1/2005
Kansas	AT&T	End Office to PSAP, direct trunk	$46	7/1/2013
Kansas	AT&T	End Office to Control Office	$50	7/1/2013
Kansas	AT&T	Control Office to PSAP	$59/M	7/1/2013
Maine[12]	CCI	DS1 line port	$23.51 / mile / line	9/16/24
Missouri	CenturyLink	End Office to PSAP	$30	2/12/2005
Missouri	AT&T	End Office to Control Office	$41	5/1/2014
Missouri	AT&T	Control Office to PSAP	$78	5/1/2014
Missouri	AT&T	Direct Trunk[13] End Office to PSAP	$46	5/1/2014
Oklahoma	AT&T	End Office to Control Office	$65[14]	4/11/2006
Oklahoma	AT&T	Control Office to PSAP	$90[15]	4/11/2006
Oregon	CenturyLink	E911 Transport	$30	3/1/2015
Pennsylvania	Embarq[16]	Trunk Lines	$30	1/4/1992
Virginia	Brightspeed	911 Transport	$58.55	4/20/2023

[8] A minimum of 2 trunks are required for each PSAP.
[9] Two rates due to CenturyTel of Arkansas, CenturyTel of Mountain Home
[10] Values are taken from NG911 tariffs that became effective in 2019. Providers are Atos, Lumen, NGA 911 and Synergem. Trunk rates are 1 Mbps $500, 10 Mbps $$740 - $1,100, 100 Mbps $2,200 - $2,400, 1000 Mbps $4,000 - $4,500. Vermont may be interested in more closely studying elements and charges in California's NG911 tariffs. The tariffs illustrate services and costs associated with NG911, GIS data, and other aspects of NG911.
[11] Could not verify information for Iowa.
[12] Included here for general informational comparison: see FCC tariff 8 (tariff 9 applies in Me) and Docket 78-731. Also note that AT&T doesn't charge for ESInet ingress if the ESInet is managed by AT&T or when AT&T is the OSP. However, AT&T may charge other OSPs / aggregators: this is the expected approach in other jurisdictions.
[13] Direct Trunking may be utilized for an E911 system with a single PSAP and no selective routing.
[14] Month-to-month charge. Monthly charge is $55 for a 12-month contract.
[15] Month-to-month charge. Monthly charge is $75 for a 12-month contract.
[16] There are no tariffs for Embarq listed with the PA PUC; see CenturyLink.

7.2 Appendix B 2011 Magellan Tariff Study

State of Vermont E9-1-1 Board Database and Trunk Cost Study

DRAFT
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State of Vermont Enhanced 9-1-1 Board
December: 10, 2011

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Introduction

This Study and Report seeks to answer the question "If the Vermont Enhanced 9-1-1 Board requested the Vermont Public Service Board open a docket to adjust the tariffs for 9-1-1 services, what is the likelihood that it would result in lower tariff payments to the telecommunications providers?" The premise for the question is very reasonable: dramatic changes in the telecommunications industry and telecommunications technology have occurred since the E9-1-1 charges were established in Vermont in 1995. To address this question, the Vermont E9-1-1 Board seeks analysis of rates for E9-1-1 service in other jurisdictions to compare to existing rates in Vermont, specifically for:

- Trunk charges (for facilities used to deliver 9-1-1 calls to the state system); and,
- Database charges (updating and maintenance of name and address information associated with telephone numbers and location information in the state database).

The object of the analysis and comparison is to determine whether existing Vermont E9-1-1 rates charged by telecommunications providers are "too high" relative to "best practice" rates in other states before potentially asking the Vermont Public Service Board (PSB) to open an investigation into FairPoint's tariffed E9-1-1 rates, or in the alternative opening discussions with state telecommunications providers to reduce rates.

Background

Vermont E9-1-1 tariff rates and the related supporting cost study were originally developed by Verizon in 1994. The rates took effect on May 22, 1995 after a stipulation between the Department of Public Service[1] and Verizon.[2] The cost study supporting the E9-1-1 rates was found to meet the Vermont Public Service Board's statutorily specified rate setting process which (among other things) requires a cost of service basis for rates. At that time, Verizon administered the state E9-1-1 system, and the Automatic Location Identification (ALI) database.

In 2007 the Vermont E9-1-1 Board took over operation of the E9-1-1 system from Verizon and undertook the administration of the ALI database. This required that the E9-1-1 Board obtain daily database updates of Verizon and independent telephone company customer record information that has changed due to daily service order activity (e.g., moves, connects and disconnects) in order to keep the ALI database as up to date as possible, and to obtain necessary trunking facilities from each central office exchange in Vermont to the relevant location on the state E9-1-1 system. Judging from the PSB's Database Order, Verizon sought to take advantage of the operational change to dramatically increase database update charges since it would no longer be operating the entire E9-1-1 system.

[1] "Department of Public Service" as the executive branch agency whose charge is to represent the public interest before the Public Service Board in matters regarding energy, telecommunications, water and wastewater should be differentiated from the Department of Public Safety which is the executive branch agency in charge of law enforcement and public safety operations, although both are referred to in their own contexts as "DPS". "DPS" in this Report refers to public utility agency.

[2] Order; Investigation into Tariff Filing of Verizon New England, Inc., d/b/a Verizon Vermont, introducing Record Reconciliation Service under Tariff No. 29; Docket No. 7271; Before the Vermont Public Service Board; March 27, 2008; at paragraph 3. (Hereafter referred to as the "Database Order".)

Upon the Vermont E9-1-1 Board's assumption of operation control of the E9-1-1 system, Verizon sought to implement a "new" Record Reconciliation service by which it would charge for reconciling discrepancies between Verizon's daily update of customer record information and the Master Street Address Guide (MSAG). Verizon sought PSB approval to charge $11,688 per month for the "Record Reconciliation" services, as compared to the prior monthly charge of $1402 for the Daily Record Update service. The PSB rejected this request by concluding that "investigating and correcting any discrepancy is an inherent part of the daily update service that Verizon has provided under its E9-1-1 tariffs since the inception of E9-1-1 service in Vermont."[3] "[Local Exchange Carriers] must accurately submit data from their customer service records and verify and correct that data when discrepancies are identified. Otherwise, the daily updates cannot be relied upon….".[4] "The evidence in this proceeding indicates that the majority of discrepancies between the E9-1-1 system information and Verizon's daily updates arise due to errors on Verizon's part. It is hard for us to conclude that Verizon is fulfilling its obligation to help create and maintain the E9-1-1 database if Verizon can then charge the E9-1-1 system a second time to correct its own errors."[5]

E9-1-1 charges have not been the subject of PSB review since that time, and thus E9-1-1 rates have stood essentially unchanged since 1995. Verizon subsequently exited the state of Vermont through sale of its Northern New England territories (Vermont, New Hampshire and Maine) to FairPoint Communications and FairPoint now administers the former Verizon E9-1-1 tariff.

Methodology and Information Sources

First, the FairPoint Vermont E9-1-1 tariff was obtained online and reviewed to gain an overall understanding of the current tariff environment. Rates for interoffice trunks are specified at Section 17.7 of the FairPoint Communications tariff, and the rate for Daily Update of the database is specified at Section 17.8 of the tariff. Also, an online tariff search was conducted for the independent telephone companies that provide service in Vermont. For independents where a tariff could not be found online, actual billing data was used. Those independent telephone companies and tariff status are:

- Franklin Telephone Company: approx. 900 lines, no E9-1-1 tariff online, actual billing data used.
- TDS Telecom (Northfield): approx. 3,200 lines, no E9-1-1 tariff online, actual billing data used.
- FairPoint "Classic" (Northland): approx. 6,200 lines, E9-1-1 tariff available.
- Shoreham Telephone (Otelco): approx. 3,600 lines, no E9-1-1 tariff online, actual billing data used.
- TDS Telecom (Ludlow): approx. 5,000 lines, no E9-1-1 tariff online, actual billing data used.
- TDS Telecom (Perkinsville): approx. 900 lines, no E9-1-1 tariff online, actual billing data used.
- Topsham Telephone (Citizens): approx. 1,600 lines, no E9-1-1 tariff online.
- Vermont Telephone: approx. 21,000 lines, no E9-1-1 tariff online, actual billing data used.
- Waitsfield Telecom: approx. 21,000 lines, no E9-1-1 tariff online, actual billing data used.

[3] Database Order, page 18.
[4] Database Order, page 20.
[5] *Ibid.*

Second, at Magellan's request E9-1-1 Board staff provided copies of actual billing from the telephone companies for database update service and interoffice trunks. This data was used for a spreadsheet to calculate "what if" scenarios. Third, E9-1-1 Board staff offered to provide electronic copies of internal analyses of trunk charges and meet point billing which Magellan then reviewed. This also was helpful for purposes of understanding the application of tariff charges and calculating "what if" scenarios. Fourth, and with the preceding information in mind, an online search and review of all available E9-1-1 tariffs for each state was conducted for the large holding company incumbent local exchange carriers (ILECs—AT&T, Verizon, CenturyLink along with Embarq and Qwest which have been merged with CenturyLink). Fifth, and with the preceding information in mind, management staffs with the New Hampshire and Maine E9-1-1 authorities were contacted to discuss the database update and interoffice trunk charges that pertain in those states. Prior to those contacts online resources were reviewed for each state. It should be noted that FairPoint Communications rates for E9-1-1 services could not be located online for New Hampshire.

The intent proposed at the inception of the project was that only a sample of states would be the subject of online tariff review. But as the sample states were being reviewed online, an "on the fly" decision was made to review the E9-1-1 tariffs for each major ILEC in each state where available. This complete review revealed different approaches to E9-1-1 tariffing. The end result of the research undertaken is that this report is based on a full census of available E9-1-1 tariffs such that the Vermont E9-1-1 Board has a complete survey of the landscape pertaining to charges for database update and interoffice trunks.

Analysis and Results

The preponderant approach to E9-1-1 tariffs is to support the ILEC's provision of the entire E9-1-1 system, e.g., bundling of Automatic Number Identification (ANI), the ALI database and function, selective routing, and transport trunking. Many of the tariffs are older and have not been revised for many years. Magellan's experience suggests that one reason for this likely is a declining focus on tariffs filed with the state utility commission by telecommunications providers and parallel increase in use of negotiated agreements (or "ICB"). Furthermore, jurisdictional E9-1-1 authorities have become more familiar with E9-1-1 operations and have been able to assume more responsibility for assembling the E9-1-1 system, lessening the need to rely on the telecommunications provider for a bundled turn-key solution.

Variation exists whether the telecommunications provider states specific prices in the tariff, or does not include pricing at all. The latter approach is commonly referred to as "Individual Case Basis" or ICB pricing—in other words the price is negotiated in each case. Across the multiple states and multiple ILECs there are numerous examples of "ICB" tariffing.

To support alternatives to the bundled ALI/Database Management System approach, a significant number of states have over time tariffed a "database service" or "customer record service" or similar functionality. These tend to be newer tariff offerings.

The States which had no E9-1-1 tariff information available online were Alaska (not served by one of the major ILECs); Connecticut; Delaware; Hawaii; New Hampshire; and West Virginia.

Database Updates

Enhanced 9-1-1 service provides emergency reporting capability using computer databases. The enhancement provided by the database validates and maintains a unique association of Master Street Address Guide information (streets and street numbering, governmental boundaries) to the telephone company's customer record information (telephone number, name and service address). The ultimate purpose of this database is to provide Automatic Location Identification and related location specific information at the Public Safety Answering Point to facilitate emergency response. The PSAP receives a 9-1-1 call, and the call includes Automatic Number Identification (ANI) as part of the dialing protocol internal to the telephone network. The PSAP uses the ANI to query the ALI database and return customer name and service address information which has been validated against the MSAG, as well as potentially other information which can be included in the database. It should be noted that Next Generation 9-1-1 (NG9-1-1) systems do not utilize an ALI database; the transition to NG9-1-1 is expected to begin in earnest in three to five years.

The ALI database can be located in either of two general places—the ALI database can be located and maintained on telephone company premises, or it can be located and maintained elsewhere under the E9-1-1 jurisdiction's control. For the first approach, the E9-1-1 jurisdiction pays charges to the telephone company for a service known as "Database Administration Management Service" (DBMS) that includes the processes and computing programs and facilities necessary to provide the ALI database. For the second approach, the E9-1-1 jurisdiction pays the telephone companies for an initial download of customer record information, and then recurring charges for regular downloads of change information which updates the downloaded customer record information for service order activity. The DBMS approach appears to be most common, but there is an emerging trend toward E9-1-1 jurisdictions' maintenance of their own databases. The Vermont E9-1-1 Board is part of that trend.

The current FairPoint tariff for Database Information for E9-1-1 authorities provides portions of individual telephone customer record information relevant for emergency response to the E9-1-1 authority. This relevant customer record information consists of the customer name, service address and telephone number for all subscribers (including those with unlisted and non-published telephone numbers), and changes to this information are transmitted to the E9-1-1 authority via daily electronic update. Independent telephone companies similarly provide this customer record information pertaining to their customers. The relevant charges are:

- FairPoint Communications: $1402 per Month
- Vermont Independent Telephone Companies: $58 per Update

The annual cost of database updates to the Vermont E9-1-1 Board from ILECs is **$112,930**:

Database Updates	Rural LEC Aggregate	FairPoint	Total	Source
Annual Updates/Months	1,657	12		E9-1-1 Board Staff
Rate	$ 58	$ 1,402		
Annual Cost	$ 96,106	$ 16,824	$ 112,930	

The online tariff research indicates the following rates apply for database update service. Also, lower ALI database update charges are provided as well since the pure database update portion of that charge (stripping out any ALI functions) must be lower, and therefore indicative of lower database update charges/costs.

State	ILEC	Service	Rate	Type	Tariff Date
New Hampshire	FairPoint	Database Update	No Charge		Per NH E9-1-1
Colorado	Qwest	Subscriber Records	No Charge		9/1/1998
Florida	Verizon	Subscriber Records	$ 0.0024	Per Record	10/6/2006
	Plus		$ 46.00	Per Month	
Maine	FairPoint	Database Update	$ 0.0470	Per Record*	9/15/2007
	Plus	Annual Audit	$ 0.0100	Per Record*	
Iowa	Qwest	Customer Records	$ 0.0184	Per Record	7/1/2005
Montana	Qwest	Subscriber Records	$ 0.0187	Per Record	9/15/2000
North Carolina	CenturyLink	Database Service	$ 0.0260	Per Line	10/27/2006
North Dakota	Qwest	Subscriber Records	$ 0.0300	Per Record	8/1/2005
New York	Verizon	ALI/DBMS	$ 0.0300	Per Record	1/21/2011
Oregon	CenturyLink	ALI Subscriber Line Data	$ 0.0311	Per Record	11/24/2000
Arkansas	CenturyLink	ALI/DBMS	$ 0.0315	Per Line	12/16/2004
Texas	Verizon	ALI/DBMS	$ 0.0390	Per Record	8/30/2004
Kansas	AT&T	Customer Records	$ 0.0425	Per Line	11/1/1994
Virginia	CenturyLink	Database Maintenance	$ 0.0470	Per Line	11/28/2004
North Carolina	Verizon	Subscriber Records	$ 0.0482	Per Line	6/14/1995

* Per Line in Maine Regulations

It should be noted that the tariff practices differ given variation in rate application between "per line" or "per record", and also whether rate application is for all access lines in the area, or just those with updated records. Magellan has confirmed that the "per record updated" application of the charge is the best practice, i.e., in Maine. In other words, the charge does not apply for customer access lines whose records were not changed via service order activity in the relevant period, nor does it apply for all access lines in the area whether or not records are updated. There is no cost basis for charging for an updated record when the record has not been updated.

The Vermont E9-1-1 Board is billed a flat rate per month for database updates. The implicit charge per record can be calculated given the number of record update for a particular period,

and compared to the above per record rates. E9-1-1 Board staff performed just such a calculation for the period June – November 2011, and the results are astounding.

Company	Updated Records	Total Charges	Cost Per Record
Burlington Telecom	747	$ 2,320	$ 3.106
Fairpoint	153,757	$ 8,412	$ 0.055
Franklin	126	$ 1,798	$ 14.270
Fairpoint Classic (Northland)	1,761	$ 8,004	$ 4.545
Waitsfield Champlain Valley	3,834	$ 7,134	$ 1.861
Shoreham	841	$ 6,090	$ 7.241
TDS	1,927	$ 7,250	$ 3.762
Topsham	221	$ 3,480	$ 15.747
Vtel	5,601	$ 5,800	$ 1.036
Totals	**168,815**	**$50,288**	**$ 0.298**

The system wide average of $0.30 per record update currently charged to the E9-1-1 Board is well above the "best practice" of no charges indicated by the online tariff review and 625% greater than the next most expensive rate.

Database Update Conclusions

It is important to reconsider whether there is a true "cost of service" basis for these database update charges at all. The telephone companies acquire customer record information as a necessary function in operating the business. The telephone company must have name, address and telephone number information for each of its subscribers for the operation of its business, including billing, maintenance, facilities and operational purposes. This customer record information is necessarily updated on a "real time" basis—again, through the company's own internal service order processes for new connections, moves or disconnections. The telephone company maintains an up to date database of its customer record information for its own business purposes. Therefore, the telephone company already has the E9-1-1 daily update information in its own customer records database. The telephone company need not undertake any incremental or additional effort to create this customer record information for the E9-1-1 jurisdiction beyond the "one time" expense for a computer program to pull updated record information into a file and transmit it to the E9-1-1 authority periodically (although some small cost for the data processing run will exist). The expense for creating the computer program was incurred long ago and is no longer relevant, while the data transmission costs for the computer file via web interface, ftp, or other means of the record transmission are imperceptible and at least partly borne by the E9-1-1 jurisdiction already in normal operations. There is no incremental cost of service to the telephone company associated with providing updates of customer record information for the E9-1-1 database.

The leading "best practice" example from the comparison with other states thus is the "no charge" practice in New Hampshire and Colorado. It should be noted that there are likely other states that follow this "no charge" practice, but they are not visible via the tariff comparison due to use of "ICB".

The Vermont E9-1-1 Board may reasonably expect to receive database updates at no charge due to the best practice observed in the neighboring state of New Hampshire, and Colorado, which in

turn is premised on the fact that there is no incremental cost of service associated with providing the database update. In the alternative, the Vermont E9-1-1 Board could accept the Verizon Florida Subscriber Record Information Service charge of $0.0024 per record plus $46 per month per company for the "Access Arrangement". Moving to the "best practice" of no charge for database updates would save approximately $113,000 in annual operating expense, while savings from adopting the Verizon Florida approach would save approximately $107,000 in annual operating expense.

Interexchange Trunks

The Vermont Enhanced 9-1-1 Board contracts with Intrado which utilizes FairPoint Communications as a subcontractor for providing network transport trunks from the FairPoint central offices to Intrado's E9-1-1 gateway. FairPoint uses its Vantage Point MPLS network to accomplish this transport function. Under the contract, Intrado is responsible for paying the trunk charges to FairPoint in its service area. Thus, FairPoint trunk charges are not relevant to the rate and tariff analysis to be provided in this report. In contrast, the trunk charges from independent telephone companies are the subject of the rate and tariff analysis provided in this report.

Independent telephone companies in Vermont bill E9-1-1 interexchange trunks using a three part rate structure of mileage (per mile), channel termination, and mileage (fixed), in concert with meet point billing such at each company bills its own charges for its portion of the circuit.[6] Current charges to the E9-1-1 Board for interexchange trunks from the rural LECs are approximately $20,000 as follows[7]:

Company	Circuits	Annual Cost
Northland/FairPoint	12	$ 2,910
Franklin Telephone	4	$ 1,756
Ludlow & Perkinsville/TDS	8	$ 1,843
Northfield/TDS	4	$ 996
Shoreham	4	$ 2,076
Topsham Telephone	4	$ 1,917
Vermont Telephone	8	*
Waitsfield Telecom	8	$ 8,072
		$ 19,570

* No Invoice/billing

Maine does not have observable interexchange trunk rate for E9-1-1 service due to the fact that FairPoint provides a bundled system to the Emergency Services Communication Bureau. New Hampshire trunk pricing information could not be obtained prior to completing the report. The online tariff review disclosed that there are several different rate structures for E9-1-1 interexchange transport among the various states. They include:

[6] This is the same rate structure that is prevalent in the industry for interstate and intrastate special access services.
[7] Note that in some cases, the mileage charges are estimated because the carrier has not provided accurate and complete mileage information. When estimating, 20% of the total circuit miles are allocated to the independent telephone company.

- E9-1-1 specific mileage sensitive rates (like Vermont);
- Intrastate Special Access rates (mileage sensitive); and,
- E9-1-1 flat rates.

Observed mileage sensitive rates from the online research do not appear to be materially different than the rates being charged currently in Vermont. Intrastate special access rates were not reviewed, but tend to be rarely used (in favor of use of interstate rates) would likely be higher. E9-1-1 flat rates from the online research are as follows:

State	ILEC	Service	Flat Rate	Tariff Date
Iowa	Qwest	E9-1-1 Data Transport, Data Circuit	$ 11.64	7/1/2005
California	AT&T	End Office Trunk	$ 26.00	11/1/2005
California	AT&T	E9-1-1 Mileage	$ 2.00	11/1/2005
Pennyslvania	Embarq	Trunk Lines	$ 30.00	1/4/1992
Missouri	CenturyLink	EO to PSAP	$ 30.00	2/12/2005
Missouri	AT&T	EO to Control Office	$ 41.00	1/11/1999
Kansas	AT&T	Direct Trunk, EO to PSAP	$ 46.00	10/25/1993
Kansas	AT&T	EO to Control Office	$ 50.00	10/25/1993
Oklahoma	AT&T	EO to Control Office	$ 65.00	4/11/2006
Arkansas	AT&T	EO to Control Office	$ 155.00	9/5/1990

Notably, the more recent tariff activity tends toward being the lower rates.

Interexchange Trunk Charge Conclusions

The leading "best practice" example for interexchange trunk charges for E9-1-1 jurisdictions is to charge on a flat rate basis. Flat rates have the advantage of being easy to administer and bill. The E9-1-1 Board is currently subject to overbilling from some of the telephone companies that so far has not been resolvable. The overbilling occurs when the telephone company bills for a larger "pipe" than is actually in place, e.g., T-1 rate when the circuit is actually 56kbps. This is even more aggravating considering that the telco on the other side of the meet point is billing the same circuit correctly for their piece.

Moving to a "best practice" of flat rate charges for E9-1-1 interexchange trunks would yield annual operating cost savings as follows:

State	ILEC	Flat Rate	52 Trunks, Annual Cost	Current Annual Cost	Savings
Iowa	Qwest	$ 11.64	$ 7,263	$ 19,494	$ 12,231
California	AT&T	$ 26.00			
California	AT&T	$ 2.00	$ 17,472	$ 19,494	$ 2,022
Pennyslvania	Embarq	$ 30.00	$ 18,720	$ 19,494	$ 774
Missouri	CenturyLink	$ 30.00	$ 18,720	$ 19,494	$ 774
Missouri	AT&T	$ 41.00	$ 25,584	$ 19,494	$ (6,090)

Kansas	AT&T	$	46.00	$	28,704	$	19,494	$	(9,210)

These results indicate that unless the new flat rate is below $30/trunk, material operational cost savings will not result.

Conclusion

The Vermont E9-1-1 Board has an excellent case that database update charges should be reduced to a "no charge" basis. The Board should consider how it might take the initiative to achieve this. Next steps could include meeting informally with DPS management to discuss findings of this Report and assess their views on reduction of E9-1-1 charges. Given a reaction by DPS management that is at least "not negative", the Board could then have a similar discussion with selected telephone companies. If and as needed along the way, policy makers in the legislative and executive branches could be informed. One admittedly immaterial but positive impact of reduced operating costs for the E9-1-1 Board is reduced pressure on the Vermont Universal Service Fund which all should view as a positive.

The Vermont E9-1-1 Board also has a good case to pursue reduction of charges for interexchange trunking. Among other positive impacts of such a change would be elimination of the current to-date insoluble overbilling problems.

This concludes the report.