SafeTechSolutions

Final Report

ASSESSMENT
OF
EMERGENCY MEDICAL SERVICES
IN
FREMONT COUNTY, WYOMING

May 2015

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Executive Summary

A reliable and high quality emergency medical service (EMS) is a necessary and vital part of health and safety in Fremont County, Wyoming. The primary and most active component of out-of-hospital emergency medical services is Fremont County EMS (FCEMS).

These findings and recommendations are based on a sustainability assessment of FCEMS conducted by SafeTech Solutions, LLP, in the spring of 2015. The assessment was funded by a grant from the State of Wyoming Department of Health and Office of EMS.

As operating today, FCEMS is not sustainable. The ambulance service’s expenses exceed its revenues, and the service likely will deplete its reserves by the end of the current fiscal year. The gap between revenues and expenses is the result of the declining volunteerism and having to pay the full cost of labor. In the coming years, FCEMS will not be able to provide the necessary quantity and quality of emergency medical services to the region if it fails to develop adequate revenue sources to fully fund its staffing demands.

Over the past year, the County Commissioners who oversee FCEMS have been reluctant to provide general funds to sustain EMS operations, and instead, have opted to reduce services by taking one full-time ambulance unit out of service. This decrease from five to four full-time ambulances has increased staff workload on the remaining ambulances, increased response times, and decreased FCEMS’ ability to provide transfer services between healthcare facilities.

Fremont County is experiencing a common problem confronting rural EMS across America. For the past 40 years, EMS in rural communities has been subsidized by donated labor (volunteers). Because of social, economic and demographic changes in rural communities and the increasing demands of working in EMS, volunteerism is shrinking. As donated labor disappears and fully paid workers are hired, rural communities are confronted with the full and true costs of providing out-of-hospital EMS. The revenues collected from transporting patients in rural areas are insufficient to fund these services. As other forms of subsidy are needed, rural communities are asking if and how EMS fits into the menu of essential services offered by local government.

This assessment focused on whether or not FCEMS is sustainable and how EMS in Fremont County might become sustainable. Key findings are:

1. As operating today the ground ambulance service in Fremont County is not financial sustainable;
2. Reliable and high quality EMS is a critical component of healthcare and quality of life in Fremont County and is needed;

3. Fremont County EMS is being operated appropriately and effectively;

4. The needed 911 ground operations cannot be funded on the 911 transport revenues and an Indian Health Services (IHS) contract alone;

5. 911 ambulance services in Fremont County have always been subsidized and will likely always need to be subsidized;

6. Volunteerism is no longer a long-term reliable means of subsidizing ambulance operations;

7. Fremont County Commissioners want to minimize the public subsidy of EMS;

8. The current EMS system is not integrated;

9. The EMS system in Fremont County can be redesigned to be provided at a low cost to the taxpayers, but this process will take 2-3 years, during which time EMS will need to be subsidized by public monies; and

10. Recruiting and retraining a high quality EMS workforce is a long-term challenge.

Amid these findings two strong and consistent messages were heard:

- A reliable, high quality EMS system is needed and wanted; and

- Fremont County has a strong desire to minimize the financial burden on the public.

We are convinced Fremont County can address both of these areas of concern, but not immediately. It will take 2-3 years to develop a sustainable, high quality EMS system that minimizes the need for public monies.

Therefore, we offer the following recommendations:

1. Accept that Fremont County government will continue to have a role in ensuring that Fremont County has an appropriate quality and quantity EMS system.

2. Subsidize EMS to operate with five advanced life support ground units for next 24-36 months.
3. Immediately begin a re-design of the EMS system with the goal of creating an integrated EMS system within 2-3 years that maximizes efficiency and reduces the need for public money within 3-5 years.

4. As the EMS system is redesigned and realizes efficiencies and increased revenues (3-5 years), reduce or replace the subsidy of public monies.

5. Maximize the EMS system’s ability to recruit and retrain a high quality engaged workforce by creating an attractive work environment and reducing barriers to recruiting and developing employees.
I. Introduction & Methodology

Like many rural ambulance services across America, Fremont County EMS (FCEMS) faces growing challenges in meeting out-of-hospital emergency medical needs. Increasing labor costs, insufficient revenues, growing demands for service, higher levels of clinical care, the regionalization of healthcare, increasing public expectations and challenges associated with workforce recruitment and retention are all challenging old ways of thinking and inviting innovative approaches to the future.

In recent years, FCEMS has transitioned from being a volunteer ambulance service to a more complex organization that provides advanced levels of care with a paid and benefited workforce. In the process of making this transition, it has experienced financial challenges related to assuming the costs of a fully paid workforce. The EMS Director and County Commissioners sought an outside perspective on long-term sustainability.

To that end, FCEMS applied for a sustainability assessment through the Wyoming Department of Health Office of EMS, which funds EMS assessments within a defined service area in accordance with W.S. 33-36-115 and Chapter 12 of the Wyoming Department of Health Emergency Medical Services Rules and Regulations.

SafeTech Solutions, LLP, an EMS consulting firm with extensive expertise in evaluating EMS organizations and assisting in the development of rural ambulance services, is the contractor for this program and conducts the assessments. SafeTech Solutions has worked with rural Wyoming EMS agencies through its EMS Leadership Academy and previous assessments in Carbon County, Wyoming.

The goal of the assessment project was to evaluate the sustainability of FCEMS’ current structure and operations and make recommendations for change and improvement as needed. The assessment focused on local needs, current operations, system design and available supporting resources, with an eye on sustainability. The scope of the assessment was limited, and was not an audit of operations, finances or clinical performance.

Methodology

SafeTech Solutions’ assessment team used a process of inquiry and investigation that capitalizes on the firm’s extensive understanding of rural EMS systems. Its principles gathered a combination of quantitative and qualitative data through research, site visits, interviews and town hall meetings. Three different consultants visited Fremont County to review documents and data, conduct interviews and assess operations. In addition to evaluating FCEMS organizational structure, leadership and operations, SafeTech Solutions paid special attention to the social, economic, demographic, cultural and political issues in Fremont County, carefully
analyzing data and making recommendations based on industry best practices, as well as what is practical and doable in Fremont County. Recommendations were presented to key stakeholders and in community town hall meetings, in which the public was invited to provide feedback.

II. Overview of Fremont County

Fremont County’s geography, climate, demographics, roadways, economy and the Wind River Indian Reservation all inform and present unique challenges for the creation and delivery of out-of-hospital EMS.

The Land
Fremont County is located on 9,266 square miles in the west central part of Wyoming. The geography of the county is marked by dramatic elevation changes from 13,804 feet above sea level on Gannett Peak to 4,035 feet on Sand Mesa, west of Boysen Reservoir. The southern end of the county is traversed by the Oregon Trail, and the northwest corner is a gateway to Yellowstone and Grand Teton National Parks. Much of the western edge of the county follows the Continental Divide at the crest of the Wind River Range of the Rocky Mountains. Although mountainous topography characterizes a lot of the county, most of the land mass is fairly flat, irrigated plains with an average elevation of 5,500 feet.¹

Nearly 60 percent of land in Fremont County is public, with 37 percent administered by the federal Bureau of Land Management or Bureau of Reclamation, 17 percent designated National Forest, and 5 percent administered by the state of Wyoming. Federal and state managed lands have historically been used for grazing, mining, timber harvest, oil and gas development, and land and water recreation.² Nearly 27 percent of Fremont County is held in trust for Native American tribes. Approximately 15 percent of the land in Fremont County is privately owned.³

¹ 2014 County Tax Assessor’s County Description, 2011 Fremont County Municipal Multi-Hazard Mitigation Action Plan, 2004 Fremont County Land Use Plan
² Fremont County Tax Assessor, Feb. 24, 2004
³ Fremont County Tax Assessor
Transportation
Fremont County contains 2,255 miles of roads. It is bisected by State Highway 287, which traverses the county from the southeast to the northwest, through the county seat of Lander, as well as Fort Washakie and Dubois, where it serves as a southern entrance to the Grand Teton National Forest and Yellowstone National Park. Because of the national park attractions, as well as year-round recreational opportunities in the Dubois area, Highway 287 is a major thoroughfare for traffic and a frequent site of highway trauma in the county. State Highway 20/26 also bisects the county and runs through Shoshoni and Riverton (from Casper to the east) before merging with 287 North to Dubois. Both highways pass through the Wind River Reservation. Per capita vehicle miles traveled on Fremont County roads is estimated at 12,880 annually.

Fremont County is served by one commercial airport. Riverton Regional Airport is considered a gateway to the aforementioned national parks, as well as an entry point for county residents to access America's major airlines via Denver International Airport. The flight schedule includes approximately one inbound and two outbound commercial flights daily. The airport serves 26,090 commercial airport passengers annually.

Land Use, Tourism & Industry
Countywide, agriculture is the dominant land use in Fremont County, and includes livestock grazing as well as the production of hay, sugar beets, dry beans, oats and corn grown in the fertile irrigated plains that surround the town of Riverton. Based on assessed valuation, the amount of land in agricultural use has remained relatively constant over time. Fremont County has the largest number of irrigated acres of any county in Wyoming.

In addition to agriculture, Fremont County is rich in minerals and other natural resources. In the northeast, near the towns of Shoshoni and Lysite, oil and gas production have become a main economic force. There is also a major natural gas

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4 2012 Fremont County Profile by the state Dept. of Administration & Information Economic Analysis Division
5 ibid
6 ibid.
7 2011 Fremont County Municipal Multi-Hazard Mitigation Action Plan
8 2004 Fremont County Land Use Plan
production field near the town of Pavillion. Green Mountain near Jeffrey City has a large store of uranium, and the South Pass and Atlantic City area is rich in gold.\(^9\)

Tourism is growing in the Dubois area. Many dude ranches and outfitting businesses can be found there, making it a three-season tourist destination.\(^{10}\) Snowmobiling is a popular winter activity in this area, as well.\(^{11}\)

In addition to the above industries, major businesses in the county that provide employment, attract residents and contribute to the local economy include the National Outdoor Leadership School, Central Wyoming College, Wyoming Catholic College, SageWest Health Care System, and the Wind River Hotel and Casino.

**The People**

The population of Fremont County in 2014 was 40,702, based on U.S. Census Department estimates. This number represents a 1.4 percent increase over the actual population of 40,123 surveyed by the 2010 census.

The majority of residents live in traditional family households in owner-occupied homes. Some 5,000 residents live alone. More than 800 people live in group-homes; of these 561 live in institutional settings.\(^{12}\)

Two ethnic groups dominate the population. Persons identifying as White make up 75 percent of Fremont County residents. Native Americans (Shoshone and Arapahoe) make up about 21 percent of the county population. All other ethnic groups represent 6 percent of county residents.\(^{13}\)

Fremont County has six incorporated cities and towns: Lander, Riverton, Dubois, Hudson, Pavillion and Shoshoni. In addition, eight census-recognized communities and six other communities are found in Fremont County.\(^{14}\) In addition, the towns of Fort Washakie, Arapahoe, and Ethete are located on the reservation. The reservation is home to approximately 2,500 Shoshone Indians and 5,000 Northern Arapahoe Indians.

About 65 percent of the population (25,905 people) lives in one of the incorporated towns; the balance of Fremont County's approximately 40,000 residents live in unincorporated parts of the county. With the exception of Dubois, most of the county's towns, and therefore its population, are clustered in the center of the county, near the intersection of state highways 287 and 20 and 26.

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\(^{9}\) 2014 County Tax Assessor's County Description

\(^{10}\) ibid

\(^{11}\) 2011 Fremont County Municipal Multi-Hazard Mitigation Action Plan

\(^{12}\) 2010 U.S. Census

\(^{13}\) ibid

\(^{14}\) 2014 County Tax Assessor's County Description
## Fremont County's Incorporated Town Populations

<table>
<thead>
<tr>
<th>Town</th>
<th>Population</th>
<th>Square Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Riverton</td>
<td>10,731</td>
<td>10</td>
</tr>
<tr>
<td>Lander</td>
<td>7,661</td>
<td>4.67</td>
</tr>
<tr>
<td>Dubois</td>
<td>1,001</td>
<td>3.48</td>
</tr>
<tr>
<td>Shoshoni</td>
<td>658</td>
<td>3.58</td>
</tr>
<tr>
<td>Hudson</td>
<td>468</td>
<td>.43</td>
</tr>
<tr>
<td>Pavillion</td>
<td>263</td>
<td>.20</td>
</tr>
<tr>
<td>Fort Washakie</td>
<td>1,816</td>
<td>20.89</td>
</tr>
<tr>
<td>Arapahoe</td>
<td>1,722</td>
<td>27.65</td>
</tr>
<tr>
<td>Ethete</td>
<td>1,585</td>
<td>32.51</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>25,905</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Source: U.S. Gazetteer Wyoming Home Town Locator*

Fremont County's residents are primarily working-age adults, ages 20 to 59. However, its population also includes more vulnerable populations, including approximately 11,000 children (18 and under), and more than 8,000 elderly (age 60 and up).

![Population Pie Chart](chart.png)

Fremont County's permanent resident population is supplemented seasonally by an influx of tourists, especially to the Dubois area. We were not able to obtain data to determine how many tourists visit the county annually; however, these visitors must be accounted for in considering emergency medical resources, which tourists frequently use when they are away from home in lieu of a personal physician, in an emergent medical situation, and when injured in recreational and vehicle accidents.
In terms of population growth, the state of Wyoming estimates an increase in county population from 40,123 in 2010 to 47,120 in 2030, which also will place increased demands on the county’s EMS system.\textsuperscript{15} According to the 2011 Fremont County Municipal Multi-Hazard Mitigation Action Plan, "The continued increase in population stretches the volunteer emergency services that serve Fremont County. Fremont County is just under 10,000 square miles (larger than the State of Vermont, New Hampshire, New Jersey, Delaware, Rhode Island and the District of Columbia). Newcomers expect the same services (i.e. fire, ambulance, law enforcement and waste removal) in the same short amount of time as where they previously resided (usually much larger communities.) There is the expectation of immediate response without consideration of the size of the county as a whole, especially in the rural areas."\textsuperscript{16}

**The Economy**
The median household income in Fremont County in 2012 was $48,565.\textsuperscript{17} This figure is about $8,000 less than the median household income statewide. Twelve percent of households in Fremont County report income of $75,000-100,000, and 16 percent report income of more than $100,000.

At the same time, approximately 15 percent of the population (close to 6,000 people) lives at or below the poverty level. The poverty rate in Fremont County is higher than the state average of 11 percent. This statistic has not changed much over time. Since 2001, poverty rates in the county have been calculated at between 12 and 16 percent consistently.\textsuperscript{18}

Unemployment in the county was 6.2 percent as of March 2015.\textsuperscript{19} This rate is the highest in the state; however, it is down from a peak of 11 percent in 2009.\textsuperscript{20}

Eighty percent of county residents report having health insurance.\textsuperscript{21} Of that group, 57 percent have private health insurance, and 35 percent have public coverage. However, this does not reflect those who utilize the ambulance service. Only 8% of those utilizing FCEMS have private health insurance (or are private pay) and 67% utilize some kind of public coverage (Medicare, Medicaid, Indian Health Services).

\textsuperscript{15} Wyoming Department of Administration & Information, Economic Analysis Division
\textsuperscript{16} 2011 Fremont County Municipal Multi-Hazard Mitigation Action Plan
\textsuperscript{17} Wyoming Department of Administration & Information, Economic Analysis Division
\textsuperscript{18} CBI Focus on Fremont County, February 2012
\textsuperscript{19} Wyoming Department of Workforce Services, Research & Planning
\textsuperscript{20} CBI Focus on Fremont County, February 2012
\textsuperscript{21} Wyoming Department of Administration & Information, Economic Analysis Division
The Wind River Indian Reservation
Encompassing more than 2.2 million acres, Wind River Indian Reservation is the seventh largest Indian reservation in the country and home to the Eastern Shoshone and the Northern Arapaho. The reservation is jointly owned, with each tribe holding 50 percent interest in the land, water and other natural resources.\(^{22}\) Tribal decisions had been made by a Joint Business Council since the 1930s; however, the Northern Arapahoe pulled out of the council last year because of persistent failure to come to consensus with the Eastern Shoshone.\(^{23}\)

The lack of consensus on a political level is reflective of larger tensions on the reservation, both between tribes and among its residents. Of particular concern are crimes related to alcohol and drug use (marijuana, methamphetamine and prescription pills mostly). The Bureau of Indian Affairs (BIA) made Wind River a pilot site for an anti-crime initiative several years ago, which temporarily tamped down on the problem, but violent crime is increasing once again now that police presence has once again declined. According to one media report, “BIA officials, who had to figure out a baseline for crime stats when the surge started, came up with an average of 94 violent crimes at Wind River during fiscal 2007 through 2009. That spiked to 144 violent crimes—a 53 percent increase—in 2010, mostly because the robust police presence encouraged more people to report crime. By 2013, however, the number of incidents had fallen dramatically to 38. As of June 2014, however, violent crime had inched back up: There were 47 cases on the books with three months left in the fiscal year.”\(^{24}\)

As recently as April 2015, tribal officials expressed concern about a rising crime rate anticipated in the wake of a reduction in the BIA police force. BIA Office of Justice Services Director Darren Cruzan testified at a recent Senate hearing, “Tribal communities continue to express grave concerns regarding the high rates of alcohol and drug use in their communities, and are even more concerned that it seems to be increasing rather than decreasing. Alcohol and drug use is the primary contributing factor to increased involvement in the justice system, violence toward women and children, and a diminishing sense of overall community safety.”\(^{25}\)

\(^{22}\) Indian Health Services
III. Overview of Fremont County EMS System

Out-of-hospital EMS in Fremont County is provided by an unplanned and organically developed system of providers that includes call-taking and communication centers, first responders, a transporting ground ambulance service, two air medical services and hospital receiving facilities.

The largest component of this system is FCEMS, the 9-1-1 ground-transporting ambulance service owned by the County. The system operates without an oversight body or significant system planning.

As operating today, the Fremont County EMS system has resources and responders scattered across more than 9,000 square miles in 10 locations (Riverton, Lander, Lysite, Shoshoni, Ethete, Jeffrey City, Atlantic City, Crowheart, Kinnear and Dubois) responding to approximately 6,300 requests for service per year. The majority of EMS resources are staged around the communities of Riverton, Lander, Fort Washakie and Ethete where the majority of calls and activity take place.

Call Taking, Dispatch & Communications
Calls for emergency medical help are received at one of three call-taking centers: the Sheriff-run Fremont County Communication Center; the Riverton Police Department, and the Bureau of Indian Affairs office in Ft. Washakie. All EMS calls are routed to the Fremont County Sheriff’s communication center, which dispatches and maintains communication with ambulances. The communication center fields 100,000 calls per year of which 23 percent (in 2014) involved an EMS component.

The Communications Center has 12 dispatchers and uses Pro QA software. It provides medical instruction to callers and critical information to responders regarding the level and severity of the call. Calls are reviewed weekly for quality issues.

Radio communications throughout the county are reported to be adequate, with a few gaps in some areas. Responders have access to the WyoLink communication system, a statewide digital trunked VHF P-25-compliant public safety communications system designed to coordinate and integrate communications between state, local and federal public safety agencies. EMS responders do not have communication with Wyoming Highway Patrol and must relay through the Fremont County Communications Center. Ambulance and portable radio equipment is reported to be adequate but aging.

First Response
First response in Fremont County is provided by first responder groups, law enforcement, search-and-rescue volunteers and, occasionally, by fire departments.
First responders groups are comprised predominately of volunteers. These volunteers respond when available and provide basic levels of care but do not transport patients. FCEMS provides education, medical equipment, supplies and, in some cases, vehicles to first responder groups.

The most active and busiest first responder group in the county is located in Ethete, on the Wind River Indian Reservation. This group of Arapahoe tribal members responds to 1-2 calls per day, has seven active members, and consistently has responders available when needed.

The Ethete first responders are exploring the possibility of creating a tribal ambulance service. The biggest challenge for this group, according to members, is recruiting people to do the work. They describe the nature of the work (dealing with trauma and illness), poverty on the reservation, and the school drop-out rate as barriers to attracting new people. Members of the responder group are concerned about their tribe being left out of EMS system planning. “We want to be included. We want a seat at the table,” one informant said. 26

Lysite has seven active first responders. Jeffrey City has four responders. Kinnear has three responders. Crowheart has two active responders, and Shoshoni and Atlantic City each have only one active responder.

Volunteer fire departments in Fremont County do not routinely provide first response on emergency medical calls. They do provide rescue, heavy extrication and occasional back up for EMS. The largest of these departments is Fremont County Fire Protection District, a consolidated county fire district. The department covers 6,000 square miles of Fremont County and has 400-450 responses per year. In 2014, the department responded to 29 structure fires, 61 wildland fires, 120 motor vehicle accidents and fires, 14 rescue/EMS assists and 63 other incidents. 27

According to informants (including firefighters), fire departments in Fremont County are not interested in providing EMS or regular emergency medical first response. One firefighter said, “We have too much trouble keeping volunteers now. For most of us, adding EMS is too much. We’ll quit.” 28

First response also is provided by the Fremont County Sheriff’s Office, the Lander Police Department, the Riverton Police Department, and federal law enforcement agencies serving the Wind River Indian Reservation. However, these agencies all report having limited resources and are not able to respond to all emergency medical calls.

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26 Interviews with Ethete first responders.
27 Fremont County Fire District website: http://www.fremontcountyfiredistrict.com/
28 Firefighter interview
The Fremont County Search and Rescue team of approximately 50 volunteers provide search-and-rescue in the county. This group conducts several major rescues each year and 1-2 responses per week during height of the tourist season.

**Ground Ambulance Service**
FCEMS provides all ground ambulance service in the county. Two full-time-staffed 24-hour advanced life support (ALS) units are stationed in Riverton, and two full-time-staffed 24-hour advanced life support (ALS) units are stationed in Lander. One volunteer intermediate-level ambulance is stationed in Dubois. At the time of this report, one local volunteer EMT-I and several drivers were staffing the Dubois-based ambulance; several additional people were enrolled in training programs. (see Description of Fremont County EMS for more details).

Because of distances and geography, Fremont County does not have access to neighboring ground ambulance services for back up. Resources from within the County must meet all ground response and transport needs.

**Air Medical Service**
Two helicopters and two fixed-wing aircraft are available in the county, usually stationed in either Riverton or Lander. These resources are staffed by advanced life support crews with critical care capabilities. These services are provided by two competing, for-profit air medical companies: Guardian Flight (with offices in Anchorage, Alaska, and South Jordan, Utah) and Classic Air Medical (headquartered in Woods Cross, Utah). Because of weather conditions, helicopters are unable to fly in the county about 30 percent of the time.

**Receiving Facilities & Other County Healthcare Resources**
Physician-staffed, 24-hour emergency receiving departments are part of two licensed hospitals in Fremont County. The hospitals, Lander Regional and Riverton Memorial, merged in May 2014 and are now known jointly as SageWest Health Care. SageWest is owned by Life Point Health, a $5.5 billion healthcare company headquartered in Brentwood, Tennessee.

There are 89 beds in Lander, and 159 in Riverton. SageWest provides Level 3 trauma care (including surgery), medical care, and obstetric care; however, patients need to be transported out of that hospital system for cardiac catheterization, advanced stroke care, burn care, complex orthopedic injuries, and specialized pediatric care. (See below for details on interfacility transport.)

According to SageWest CEO Steve Erixon, SageWest is not currently interested in providing or operating out-of-hospital EMS in Fremont County.

There are three nursing homes in the county. Bed capacity is 45 in Fort Washakie, 60 in Lander and 81 in Riverton. There are also three assisted living facilities in the county. Bed capacity is 25 in Dubois, 50 in Lander and 49 in Riverton.
Healthcare on the Wind River Indian Reservation is provided by Indian Health Services (IHS), which operates one outpatient clinic in Arapahoe and another in Fort Washakie. The clinics are staffed with family physicians, pediatricians, physician assistant, family nurse practitioners, psychologists, dentists, dietician, public health nurses and optometrists. Specialty clinics are also held at IHS facilities, ranging from orthopedic, podiatry, nephrology, obstetrics, audiology, women’s health and cardiopulmonary services. The population that uses IHS services is estimated at 10,964 Native American people.

According to Darrell O’Neal, Sr., Chairman of the Northern Arapaho, the healthcare facility on the Wind River Reservation is inadequate to meet the needs of reservation residents. “We have a 100-year-old Wyoming health facility on the Wind River Reservation,” he testified before the United States Senate Committee on Indian Affairs. “The health service has failed to assist the tribe in replacing the facility. The average age of a current Indian health facility is 32 years, compared with 9 years in private sector facilities. New and properly designed facilities are needed to provide efficient space in which to provide services. Older facilities tend to be inefficient, haphazard, and may not be in compliance with OSHA or Americans with Disabilities Act standards, and the Indian Health Service is unresponsive.”

Mobile Integrated Health
In 2014, FCEMS piloted a physician-guided mobile integrated health community paramedic program in the Dubois area. Mobile integrated health is a term for healthcare “intended to serve a range of patients in the out-of-hospital setting by providing 24/7 needs-based, at-home integrated acute care, chronic care and prevention service... When operated as part of an Emergency Medical Services (EMS) system, these programs have commonly been called ‘Community Paramedicine’ and have emerged as local pilot projects.”

The pilot program used EMS providers to deliver home visits and care for patients referred by the local clinic. The target patients were those with chronic diseases such as COPD, CHF, diabetes and those with uncontrolled cardiac issues (new MI, stents, etc.). Patients were assessed and checked for medication compliance and provided with minor interventions. The FCEMS Director and Medical Director saw the program as a successful pilot. Mobile Integrated Health and community paramedic programs have not been defined in Wyoming State Law.

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29 Testimony before the US Senate Committee on Indian Affairs, May 27, 2014.
EMS Education
FCEMS provided most of the EMS-related education in the county for the public, first responders, law enforcement and the healthcare community, with supplemental help from area air medical services. FCEMS provides its own continuing education. Regular first-responder education is conducted by FCEMS and is provided in their facilities in Riverton and Lander. CPR and other courses are periodically offered to the public. EMT training is conducted within the county but must be approved and opened by the Wyoming Office of EMS. There is no paramedic training program in the county. Central Wyoming College in Riverton provides Wilderness First Responder and wilderness EMT courses.

EMS System Oversight
Because of the unplanned nature of the EMS system in Fremont County, there is no overall system oversight and performance evaluation in which all components (communications, first response, ground ambulance, air medical and receiving facilities) come together to be evaluated against established performance indicators. FCEMS has a medical director and an active quality program. Various parts of the system occasionally come together to review responses and issues.

How the EMS System Currently Works
Calls for emergency medical help are received at one of three call taking centers: the Fremont County Sheriff’s communication center; the Riverton Police Department, and the Bureau of Indian Affairs office in Ft. Washakie. All EMS calls are transferred to the Fremont County Sheriff communication center, from which EMS resources are dispatched and where communication is maintained.

First responders and FCEMS ground transporting ambulances are simultaneously dispatched to 9-1-1 calls. Law enforcement resources are dispatched when available, with some officers carrying first aid equipment and AEDs. EMS responders radio requests for air medical helicopters on an as-needed basis. As of April 2015, dispatchers also have begun to auto-launch a medical helicopter to all calls in the Dubois area to compensate for the removal of full-time staffed 24-hour ALS unit and the shortage of volunteers.
The EMS system uses a modified fixed-station model and moves ALS resources to provide maximum coverage around Riverton, Lander, Fort Washakie and Ethete. Ground ambulances in Lander and Riverton provide advanced life support care. Both BLS and ALS ground resources are dispatched for calls in the Dubois area.

A majority of 911 patients are transported to hospital emergency departments in Riverton and Lander. Patients needing treatment and resources beyond those available in Fremont County typically are transferred to care centers in Casper, Cheyenne, Denver, and Salt Lake City by ground, roto-wing or fixed wing resources. Ground transport to a cardiac catheter laboratory takes approximately 2 hours. Ground transport to a Level I trauma center takes approximately 5 hours.

The EMS system also provides coverage for a variety of community events such as athletic competitions, parades, rodeos, motocross and fairs.

**Call Volume**
The Fremont County EMS system gets more than 6,000 requests for service annually. Approximately 4,500 of those calls are 9-1-1 ground ambulance emergency requests. Close to 1,000 additional requests are for ground ambulance transfers, and 600 calls are for air medical transfers.

The majority of EMS calls come from the more populated areas of the county, including Riverton, Lander, Fort Washakie, Ethete, and secondarily, the outlying communities of Dubois, Shoshoni, Lysite, Jeffrey City, Crowheart and Atlantic City.
These secondary areas are 40 to 80 miles from medical facilities in Lander and Riverton.

**Number of EMS Calls by Location in 2014**

![Map showing EMS call locations in 2014]

*Source: Fremont County EMS*

FCEMS responded to 5,181 calls in 2014. The top reasons that prompted people to call EMS are as follows:

<table>
<thead>
<tr>
<th>Nature of EMS Incidents in 2014</th>
<th>Number of Ground Ambulance Calls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trauma</strong> <em>(includes animal bites, assault, burns, falls, hemorrhage, laceration, traffic accident, injury, gunshot, stabbing, drowning, diving accident, electrocution)</em></td>
<td>1,440</td>
</tr>
<tr>
<td><strong>Medical</strong> <em>(includes abdominal pain, allergic reaction, back pain, choking, seizure, diabetes, headache, stroke, unconscious, illness)</em></td>
<td>1,324</td>
</tr>
<tr>
<td><strong>Cardiac</strong> <em>(includes difficulty breathing, cardiac arrest, chest pain, heart problems)</em></td>
<td>766</td>
</tr>
<tr>
<td>Interfacility Transport Ground</td>
<td>954</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Misc. other</td>
<td>697</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>5,181</strong></td>
</tr>
</tbody>
</table>

*Source: Fremont County Communication Center*

The largest category of 911 EMS calls was for trauma (includes animal bites, assault, burns, falls, hemorrhage, laceration, traffic accident, injury, gunshot, stabbing, drowning, diving accident, electrocution), which reflects the high incidence of motor vehicle accidents and falls in the county, and the associated high death rates. The high number of trauma calls also may be related to high rates of alcohol and drug abuse in the county, as described below. Informants report a high level of non-transport, cancels, unfounded calls, and calls in which the patient is “gone upon arrival.” Exact numbers were not obtained.

It is interesting to note that nearly 1,000 EMS calls were for inter-facility transportation, in other words, moving patients between hospitals in Fremont County and from Fremont County healthcare facilities to higher levels of specialized healthcare outside the county. Because of long distances to specialized healthcare, emergency medical transport times to these destinations are very long. For example, the closest Level II Trauma and Cardiac Care Center to Fremont County is in Casper, Wyoming, which is 120 miles from Riverton. A typical EMS ground transport to Casper takes four to six hours round trip. The closest Level I Trauma Center/Burn Center is in Salt Lake City, Utah, (314 miles away) or Denver, Colorado (350 miles away), both of which necessitate multi-hour transports by ground ambulance.

In addition to the 5,181 ground ambulance transports, fixed wing and helicopter aircraft transported approximately 600 patients to a variety of destinations that include Casper, Cheyenne, Denver and Salt Lake City.

The Fremont County Search and Rescue team responds to approximately 2 mountain climbing or backcountry rescues per week during the summer months.

Based on data from the Wyoming Ambulance Transport Reporting System (WATRS) (the State of Wyoming’s EMS data collection system), Fremont County's call volume has remained fairly stable since 2011. Based on the first 3 months of 2015, we anticipate a 4 percent growth in call volume in 2015, for a total of 5,736 requests for service.
The volume of 9-1-1 calls in Fremont County stays fairly stable throughout the week with slight peaks on Thursday and Friday. Call volume by hour of day compares favorably with other systems, with peak volume between 9 am and 9 pm.

**EMS Call Volume by Time of Day**

*Source: WATRS*
IV. Description of Fremont County EMS

FCEMS is a county-owned ambulance service that provides 9-1-1 response and transportation; ground inter-facility transport; EMS educational services to employees, first responders, law enforcement and the public; and support to first responder groups. It is the sole provider of ground ambulance services in Fremont County, but does not have an exclusive franchise to provide these services.

Structurally, FCEMS is not a department of the county. County officials describe the service as an “enterprise fund.” Typically, an enterprise fund establishes separate accounting and financial reporting mechanisms for municipal services for which a fee is charged in exchange for goods or services. County financial documents describe FCEMS as a “proprietary fund.”

FCEMS does not have its own board of directors. Instead, it is directly overseen by Fremont County Commissioners, who operate FCEMS as if it were a department of the county. Commissioners hire and fire the director and are heavily involved in operational and financial decisions, including the approval of small (less than $200) budgetary expenditures. FCEMS director reports to a single County Commissioner but is often given instructions and directives from other commissioners and other
county officials. Some of these instructions and directives appear in conflict.\textsuperscript{31} County Commissions have no written performance expectations for the FCEMS director.

**Historical Development**

Ambulance services developed in Fremont County in the early 1960s as volunteer organizations, some of which were in partnership with local funeral homes. At some point (the exact date could not be determined), Fremont County combined several local volunteer ambulance services into one countywide organization. The county assumed responsibility for providing ambulance services to the entire county and funded the services using the county general fund, as well as revenues generated by a $50 per transport fee. Local volunteers provided free staffing. In the 1980s, there were 21 ambulances in 9 stations scattered around the county. Through the 1980s and early 1990s, FCEMS struggled with insufficient funding to replace needed medical equipment and supplies. \textsuperscript{32}

During the 1990s, U.S. Department of Labor “waiting for work” laws required FCEMS to pay minimum wage to EMS workers. As a result, FCEMS also began to pay for full-time management positions and expand its levels of care. As costs increased, Fremont County Commissioners considered privatizing the service but could not find a company that would assume coverage responsibility for the entire county. An earlier attempt by a citizen to successfully operate a private ambulance service in the county had failed. As Commissioners became concerned about the burden of EMS on the general fund, they moved EMS to an “enterprise fund,” with the expectation that FCEMS operate within its revenues. Transport charges to patients, private insurance, Medicare and Medicaid were increased, and a contract with Indian Health Services was negotiated.

During the last decade, FCEMS has seen a significant increase in call volume, declines in volunteers, and the need to centralize operations around the Riverton and Lander areas. By 2005, the decline in volunteers and increasing call volumes posed a threat to FCEMS’s ability to reliably respond to all EMS 9-1-1 calls in the county. Full-time field staff was increased from two to four, and part-time wages were offered to many volunteers as an incentive for their participation. As call volumes continued to increase, more paid but un-benefitted staff were added in an attempt to operate within revenues generated. In November 2013, county officials made EMS workers benefitted county employees as part of the county’s reading of the federal Affordable Care Act. This move gave EMS employees health insurance and retirement benefits, dramatically increasing labor costs.

\textsuperscript{31} Emails and documents between FCEMS Director and County Commissssioners.

\textsuperscript{32} Historical information comes from interviews with former FCEMS Director Joe Zilmer, and from a letter dated October 4, 2007 from former FCEMS Director Laurie Wempen to former Wyoming Department of Health EMS Program Manager Jim Mayberry.
**Internal Structure**

Today FCEMS has approximately regular 30 employees and a common leadership team structure. It is led and managed by a director, two division supervisors and six captains. The organization has a billing coordinator, a part-time quality coordinator, a part-time medical director and an administrative assistant. There is little delineation between administrative, operational, financial and clinical responsibilities.

**FCEMS Leadership Team Structure**

FCEMS has approximately 26 field providers (division supervisors and captains all work as field staff). Exact employee numbers varied during the assessment as staff came and went. Staff certification levels and numbers are:

- Fulltime Paramedics (9)
- Fulltime EMT-Intermediate (3)
- Fulltime EMTs (9)
- Part-time Paramedic (1)
- Part-time EMT-Intermediate (1)
- Drivers (2)
- RN functioning as EMT-I (1)

Approximately 65 percent of FCEMS staff has been with the organization 3 years or less, 23 percent 4 to 8 years, and 12 percent greater than 8 years. Meaningful turnover rates could not be assessed; but according to leadership, finding and keeping quality employees is an ongoing challenge.
Employees are paid reasonable wages for the area market, with paramedics earning approximately $18-19 per hour. Field providers are scheduled on what leadership refers to as a “modified Los Angeles shift”. Providers report working 24-96 hour shifts and are currently able to earn significant overtime wages.

Financial Structure
Revenues, expenses and associated financial practices were reviewed as part of the assessment. Financial records appear to be in good order, and accounting practices are consistent with those of similar-sized ambulance services. FCEMS conducts its own patient billing, and the county processes its payroll.

FCEMS is currently funded through fees collected for transportation from private payers, private insurance, Medicare and Medicaid; a contract with Indian Health Services; and grants donations and other miscellaneous sources. FCEMS receives no regular subsidy of public monies, but historically the county has provided some monies from the general fund for large capital purchases, such as buildings.

Projected revenues for the 2014-2015 fiscal year are: 33

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport fees</td>
<td>$1,544,000</td>
</tr>
<tr>
<td>IHS contract</td>
<td>$ 456,000</td>
</tr>
<tr>
<td>Misc. revenues, grants, donations</td>
<td>$ 277,400</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$2,277,400</strong></td>
</tr>
</tbody>
</table>

FCEMS billing rates are in line with the market and the particular challenges of Fremont County. A bill for an advance life support transport would typically be around $1,500.

Unusual in FCEMS’s financial picture is its payer mix. A typical rural ambulance service will have a payer mix of 70 percent governmental payers (Medicare, Medicaid, IHS) and 30 percent private payers. This breakdown is important because private payers pay more and help to support costs to provide services to governmental payers.

FCEMS’ payer mix 34 is:

- Medicare 32 percent
- Medical Assistance 20 percent
- Indian Health Services 15 percent
- No Transport/Not Billable 25 percent
- Private pay/Private Insurance 8 percent

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33 2014 FCEMS document titled “Budget Request”
34 FCEMS data
Notably, at FCEMS, less than 10 percent of FCEMS’s payers are private pay; thus, private payers are failing to make up for lower-paying government payers.

FCEMS expenses as reported are generally appropriate for the services being provided. However budgeting appears to be low. A single advanced life support ambulance (with crew, vehicle, equipment, supplies, facility and overhead) will generally cost about $900,000 per year.

Projected expenses for the 2014-2015 fiscal year are: $2,909,656. Seventy-four percent of these expenses are for labor costs.  

A useful tool for evaluating financial performance is to look at the cost per call vs. revenue per call. As the chart below demonstrates, costs and expenses were generally balanced prior to 2013. In 2013, FCEMS absorbed the full cost of a benefitted labor force, thus costs per call exceed revenue per call by 2014, creating the current shortfall.

**FCEMS Cost per Call vs. Revenue per Call**

![Chart showing cost per call vs revenue per call]

It is also useful to note the projected decline in revenues for 2015, which is related to losses associated with an audit of Medicare billings being conducted by the Center for Medicare Services. This assessment did not evaluate the appropriateness of billing.

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35 ibid.
During the time of this assessment, FCEMS was attempting to close the gap between cumulative revenues and expenses by reducing the number of deployed ambulances. To fully close the gap, FCEMS would need to reduce its operations from its current level of four ambulance units to 2.5 ambulance units.

**Equipment, Facilities & Vehicles**

FCEMS is headquartered in a large building in Riverton. The building is modern and in good repair and has ample space for administrative offices, crew quarters, training classrooms and vehicles. The building has appropriate IT infrastructure. A similar-sized building is located Lander. A smaller building to house ambulances and crews is located in Dubois.

FCEMS owns 14 ambulances and several command vehicles. The fleet includes a mixture of models and types, including four-wheel drive vehicles and vans. While serviceable and meeting today's needs, some of the vehicles are more than 10 years old and need to be replaced. Several of the ambulances are used for first responder groups and not considered usable for frontline response and transport.

Equipment and supplies are appropriate for a rural advanced life support service, including Zoll X Series monitors and Lucas devices. Power assist cots were budgeted for in 2014-2015, but were not purchased in an effort to reduce expenses. Non-powered cots were leased instead.

**Clinical Care, Medical Direction & Quality Assurance**

While an in-depth review of clinical practices was beyond the scope of this assessment, it is clear that FCEMS places a high priority on providing quality clinical care. Receiving facilities spoke highly of clinical care provided. While not a direct quality-of-care issue, the hospital emergency departments reported frequent delays in ground transfers from hospitals to other medical facilities because ambulances are busy handling 9-1-1 responses and therefore unavailable and/or delayed for transfers when needed.

FCEMS Medical Direction is provided by a local physician who is board certified in general surgery and has 20 years of clinical experience. Medical protocols are up-to-date and in line with common practice in other, similar-sized EMS operations.

FCEMS has an active quality oversight process that begins with hiring. Candidates are interviewed by a panel of management and staff and must pass a scenario-based competency evaluation. New hires must complete a Field Training Orientation process in which they are monitored by Field Training Officers. The process includes ongoing competency evaluation, training and approval by a clinical advisor.

A quality coordinator reviews each patient care report for protocol compliance, deviation and general patient care. Monthly reviews of calls are held, with the Medical Director presiding and leading the discussion. On a monthly basis, EMS representatives attend an Emergency Department operations meeting held with the
ED Director, Chief Nursing Officer, Laboratory Director, ED Physicians, and EMS Medical Director, in which cases are reviewed and performance is evaluated with the goal of maintaining quality and identifying and implementing improvement. Supervisors conduct yearly staff evaluations.

V. Key Findings

Finding 1: As operating today, the ground ambulance service in Fremont County is not financial sustainable.

FCEMS will end the fiscal year (July 1, 2014 to June 30, 2015) with an approximately $600,000 shortfall and exhaust its reserves. To adequately meet the more than 5,500 annual requests for out-of-hospital emergency medical services in Fremont County, FCEMS needs a budget of $4.5 million.

Historically, the county government has not subsidized EMS operations, and County Commissioners have maintained a commitment to not subsidizing EMS operations from the county general fund. In interviews, Commissioners made the following statements:

- “We will cut services before subsidizing EMS.”
- “The county cannot sustain these services.”
- “The county shouldn’t have to pay for everything. The people who use these services should pay for them.”

Currently FCEMS has revenues of $2.3 million and has been cutting services in an attempt to reduce its shortfall and balance its budget. A review of Medicare claims by the Center for Medicare Services (CMS) has placed a hold on reimbursement with the potential of further decreasing revenues for this year and potentially next year.

The gap between expenses and revenues is not the result of financial mismanagement. Rather, it is the result of a dramatic increase in labor costs in 2013 associated with the disappearance of a subsidy provided by donated and un-benefitted labor and the need to replace that subsidy with full-time benefited workers.

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36 Interviews with Fremont County Commissioners
Since becoming a governmental service in 1980s, FCEMS has strived to operate with a balanced budget and limited public tax support. Over the years, its operating revenues have come from the following sources: patient transportation fees paid by health insurance, auto insurance, private payers, Medicare and Medicaid; an Indian Health Services contract; donations and fund raisers; and occasionally from the Fremont County general fund for facilities, vehicles and other large capital expenditures. A balanced budget was made possible by using donated labor (volunteers) and part-time employees who were not paid benefits (such as medical insurance and retirement).

Over the past five years, demands for EMS have increased, volunteerism has declined, and more paid staff have been added. In 2013, FCEMS made the majority of its employees full-time and began paying them benefits (in part to become compliant with the county’s interpretation of the Affordable Health Care Act). As a result, costs dramatically increased, and FCEMS’ ability to adequately fund EMS operations as it had done in the past became impossible.

**Finding 2: Reliable, high quality EMS is a critical component of healthcare and quality of life in Fremont County.**
Because of its size, geography, socioeconomics, climate, as well as healthcare concerns of its population and limited healthcare resources, out-of-hospital EMS in Fremont County is vital to quality of life, reducing morbidity (illness) and mortality (death) for county residents and tourists.

Reliable, high quality medical services have become a common expectation of American life. In interviews with citizens, healthcare workers, business owners, law enforcement, government officials, school administrators, we found common agreement that an appropriate level of EMS is needed and wanted in Fremont County.

Part of this need and want is related to the size of Fremont County (more than 9,000 square miles) and the distances and weather issues associated with reaching patients and transporting patients to appropriate care facilities outside the county. Beyond geography and distance, Fremont County presents some unique challenges associated with the healthcare needs of its population.

**Healthcare Needs of Fremont County’s Population**

There are two definitive sources of healthcare information that have emerged in recent years that shed light on the health of Fremont County residents.

The first is the annual County Health Roadmaps & Rankings program, a collaboration of the Robert Wood Johnson Foundation and the University of Wisconsin Public Health Institute. The annual County Health Rankings measure vital health factors, including high school graduation rates, obesity, smoking, unemployment, access to healthy foods, the quality of air and water, income, and teen births in nearly every county in America. Experts compile the rankings using county-level measures from a variety of national data sources.

After Fremont County earned the distinction of being the state’s least healthy county in County Health Rankings two years in a row, Fremont County’s Public Health Department decided to undertake a community health assessment involving all communities is Fremont County. A multi-disciplinary team was formed with representatives from all communities in the county, including the Wind River Indian Reservation. In April 2011, MAPPPing a Healthier Fremont County Coalition was formed. The group chose to use the Mobilizing for Action through Planning and Partnerships (MAPP) framework for completing this assessment, which was conducted by Jamie Cardine RN, BSN, of the Fremont County Public Health Department.

According to these sources, in 2015, Fremont County still ranks worst among Wyoming counties in length of life (it has the highest premature death rate of any county in the state) and 21st out of 23 counties in quality of life, which reflects residents’ poor or fair health, poor physical health days, poor mental health days and low infant birth weight. Fremont County rates last in health factors, as well,
based on high rates of smoking and obesity, lack of exercise, high alcohol use, inadequate medical care, and a range of other clinical and socioeconomic factors.\textsuperscript{37}

Fremont County suffers from high rates of highway traffic injuries and death, and drug and alcohol abuse. More specifically, Fremont County ranks worst in the state for alcohol-related motor vehicle fatalities.\textsuperscript{38}

Making all of these health risks worse is the fact that 24\% of Fremont County residents do not have health insurance.\textsuperscript{39} People without insurance put a particular burden on EMS because they are known to access the healthcare system through 911 and hospital emergency departments, rather than through non-emergency options, such as personal physicians and clinics. Media reports suggest that misuse of the 911 system may account for between 20 and 80\% of emergency calls.\textsuperscript{40}

The 2012 MAPPing a Healthier Fremont County Coalition Community Assessment is an excellent document that details many of the specific health risks facing county residents, and we urge a full review of its contents. For purposes of this report, we will focus only on the areas of healthcare that have the most impact on Emergency Medical Services.

**Obesity and Diabetes**

More than 25\% of adults in Fremont County are obese.\textsuperscript{41} The problem is particularly acute among Native American populations; 71\% of individuals on the Wind River Reservation are reported as having a body mass index (BMI) greater than 30.0. Obesity is a contributing factor in diabetes, which is the fourth leading cause of death among Native Americans residing on reservations in Montana and Wyoming. Approximately 12\% of adults — 917 individuals — on the Wind River Reservation have been diagnosed with diabetes. Among those individuals with diabetes on the Wind River Reservation, 67\% have hemoglobin A1C levels above 7.0; 32\% have hemoglobin A1C levels above 9.0.\textsuperscript{42}

**Alcoholism**

Fremont County has a very high death rate from unnatural causes. Most of the deaths in Fremont County involve alcohol or drugs.\textsuperscript{43} According to MAPPing a Healthier Fremont County, 51\% of Fremont County residents reported drinking in the 30 days prior to the 2012 data collection; however, 13.5\% specifically report binge drinking, which is five or more drinks on one occasion for men and four for women.\textsuperscript{44}

\textsuperscript{37} County Health Ranking & Roadmaps 2015
\textsuperscript{38} MAPPing a Healthier Fremont County Coalition Community Assessment 2012
\textsuperscript{39} County Health Ranking & Roadmaps 2015
\textsuperscript{40} CNN Money, Sep. 8, 1009 and MSNBC, Aug. 5, 2008
\textsuperscript{41} MAPPing a Healthier Fremont County Coalition Community Assessment 2012
\textsuperscript{42} http://ardd.sph.umich.edu/eastern_shoshone_tribe.html
\textsuperscript{43} MAPPing a Healthier Fremont County Coalition Community Assessment 2012
\textsuperscript{44} ibid
The same study reports that Fremont County is the worst place in the state for alcohol-related motor vehicle fatalities. Between 2008 and 2011, there were 582 traffic fatalities in Wyoming. Of those, 84 occurred in Fremont County. That means 14% of the states traffic fatalities occurred in a county that accounts for 7% of the population. Of these roadway fatalities, more than 50% were alcohol-related. Similarly, in 2011, drugs and alcohol were involved in 71% of homicides, 35% of suicides, and 41% of accidental deaths in the county.45

Drug- and alcohol-related deaths in the first quarter of 2015 account for 19% of the coroner cases reported at the time of writing. This figure is considerably higher than the same period in 2014 (10%). Seven of twelve non-natural deaths involved drugs or alcohol (58%).46

**Trauma**

Highway trauma is not always related to alcohol use. Fremont County has more than 2,000 miles of roadways, motorists accustomed to traveling at excessive speeds, a large number of tourists who may be unfamiliar with the roads, and frequently severe weather, especially in winter. All of these factors contribute to a motor vehicle death rate in Fremont County that is the highest in the state (32-44 deaths/100,000 compared to a state average of 24). The death rate for motor vehicle occupants in Fremont County is 8-11 per 100,000 compared to a state average of 9.92.47 Motor vehicle death trends in the first quarter of 2015 are the same as 2014; however, are larger in number for the quarter compared to seven deaths total for 2013, and 13 deaths total for 2012.48

Motor vehicle crashes are the leading cause of unintentional injury death for Native Americans age 1-44 in the United States, with Wyoming being the state with the highest motor vehicle-related death rate between 2003-2007. Between the years of 1994-2009, Wyoming DOT reported 4,848 motor-vehicle crashes involving 11,696 individuals within the Wind River Indian Reservation boundaries. Similar numbers of males and females were involved, with 40.8% all crashes occurring with drivers less than age 26. The annual number of motor vehicle crashes did not vary significantly by year. 75.3% of crashes occurred during daylight, with 71.0% on dry roads. Individuals not wearing seatbelts exhibit a higher fatality risk.49

In addition to having high rates of motor vehicle trauma, Fremont County also sees a higher than average rate of falls (7.5-11 per 100,000 versus 7.84 for the state). The death rate from falls in Fremont County is the highest in the state. The overall death rate from traumatic injury in Fremont County is 70-89 per 100,000, compared to 57

45 ibid
46 Fremont County Coroner’s Report for the first quarter of 2015
47 FCEMS Sustainability Analysis, October 7, 2014
48 Fremont County Coroner’s Report for the first quarter of 2015
per 100,000 statewide. Again, this is the highest death rate in the state of Wyoming.\(^5^0\)

As snowmobiling increases in popularity in the western part of the county, it, too, may contribute to trauma injuries that demand EMS response out of Dubois. The Lander office of the U.S. Forest Service reports an estimate of around 10,000 snowmobile crossings of traffic counters on the Continental Divide snowmobile Trail near Dubois per winter, and around 7,500 crossings per year on the Loop Road above Lander. These numbers do not include the number of snowmobiles using Fremont County’s snowmobiling areas where traffic counters have not been installed.\(^5^1\)

**EMS Response to Fremont County Healthcare Needs**

During town hall meetings in Fremont County, many residents inquired about the level of out-of-hospital EMS needed to meet local healthcare needs.

Modern out-of-hospital EMS is designed to take acute medical care to the patient, and provide care as needed while transporting the patient to a definitive healthcare facility. Common levels of care include basic life support and advanced life support. Basic life support focuses on ensuring the “basics” of survival, commonly referred to as airway, breathing and circulation. Advanced life support goes beyond basic skills needed to sustain life and provides interventions and stabilization with intravenous solutions, medications, advance airway tools and more assessment tools and procedures. Advanced life support is most valuable in situations where transport times are long and illness and injuries are severe.

Basic life support services can be delivered for 15-50 percent less than the costs of advanced life support because basic life support uses a lower-paid worker (EMT vs. paramedic). FCEMS Medical Director Scott Bender, MD, believes that advanced life support is warranted and needed as the primary level of care provided by 9-1-1 ground ambulances in Fremont County.\(^5^2\) Citing situations such as cardiac care, stroke and trauma and the unique challenges of distances and time, Bender said advanced life support is valuable and will provide the best outcomes. The EMS experts conducting this assessment concur with Dr. Bender.

**Finding 3: Fremont County EMS is being operated appropriately and effectively.**

The manner in which 9-1-1 ground EMS is currently being delivered in terms of the resources, staffing, equipment, standard operating procedures and clinical protocols

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\(^5^0\) FCEMS Sustainability Analysis, October 7, 2014

\(^5^1\) The Economic Impact of Travel in Wyoming, May 2010, Dean Runyan Associates

\(^5^2\) Interview with Scott Bender, MD, February 17, 2015
is consistent with best practices in the EMS industry. Assessment consultants found no major operational deficiencies in terms of how the service is being operated.

The FCEMS Director is knowledgeable and experienced, and the management team is operating the organization in accordance with sound business practice. Recordkeeping appears to be in good order and up-to-date. Operational and performance data are consistently collected and evaluated. Improvement is a priority and the organization is clearly keeping abreast of industry trends (as evidenced by its mobile integrated healthcare pilot project).

The FCEMS Director has consistently and appropriately identified the current financial shortfall and, according to documents, has made County Commissioners aware of the impending financial challenges early in 2014.\(^53\) Budget predictions appear to be sound.

The current deployment of 2 full-time staffed ambulances in Lander and 2 full-time staffed ambulances in Riverton is appropriate, given the call locations and financial resources available. Resources are continuously repositioned to provide best response to 9-1-1 emergencies. Call location data clearly demonstrates the need for a full-time staffed ambulance in Dubois. The decision to remove a full-time staffed ambulance from Dubois appears to have been driven by an insistence from the commissioners that FCEMS reduce costs and not use county general funds for EMS operations, rather than guided by sound operational principles.

The inability to provide consistent and timely ground transfer services to the hospital is the result of resource shortages, not mismanagement.

**Finding 4. The needed 9-1-1 ground operations cannot be funded on 9-1-1 transport revenues and the current Indian Health Services contract alone.**

In most rural EMS systems, revenues from 9-1-1 transports do not cover the costs of providing the services. This challenge is exacerbated in Fremont County by a higher than usual number of government payers (Medicare, Medicaid and Indian Health Services). Regardless of what FCEMS bills, government payers consistently pay only a small a percentage of the true costs of providing EMS services.

Likewise, the current Indian Health Services contract does not cover the true costs of services being delivered to IHS patients and should be renegotiated. However, renegotiating this contract to an appropriate level still will not make FCEMS sustainable because of the high percentage of government payers in the county.

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\(^53\) Emails from Joseph Zillmer to Fremont County Commissioners
Various Avenues for Addressing the Shortfall

Fremont County is not mandated to provide ambulance services and has a variety of options to cope with FCEMS' revenue shortfall, that include:

- Do nothing;
- Sell the assets and operation to a private provider and get out of the EMS business entirely;
- Create performance expectations for FCEMS and then issue a request for proposals for qualified bidders to contract for services;
- Subsidize the current operations with public monies, such as a sales tax, property tax or special district tax;
- Reduce services to match revenues (thus resulting in lower response times or lower levels of services); and/or
- Create an integrated service that maximizes revenues.

Each of the options has opportunities and risks associated with it.

- Taking no action postpones the decision, temporarily limits the political risk to elected officials, but eventually sees FCEMS run out of money.
- Selling the assets and operation immediately relieves the county of responsibility but creates a risk if the buyer cannot make the operation into a successful business and closes shop. Restarting the ambulance service without the assets could cost between $10-20 million.\(^{54}\)
- Contracting for services allows the county to share risk and limit involvement; however, contracting does not ensure the county will not need subsidize EMS. Creating and issuing an RFP that ensures services meet performance expectations takes careful consideration and a careful qualifying of bidders.
- Subsidizing the current operation with a tax can provide the service with ample funding and ease tensions around this issue. However, proposing a tax has political risk with no assurance that the public will actually pass the tax. Any tax will take 6 months or more to begin producing revenues.
- Cutting services to match revenues would demand a reduction to 2.5 full-time staffed ambulances. This would relieve the need for public monies, but leave many requests for ambulance unanswered or severely delayed. Much of the current workforce would likely leave.
- The risks and benefits of creating an integrated service that maximizes revenues is discussed later in the report.

Finding 5: 911 ambulance services in Fremont County have always been subsidized and will likely always need to be subsidized.

FCEMS has been subsidized since its inception. This subsidy has been provided by a small number of people who donated thousands of hours of labor to EMS each year.

\(^{54}\) SafeTech Solutions’ estimation of acquiring basic operational assets, including ambulances, equipment and facilities.
The annual value of volunteer labor to staff one basic life support ambulance in Wyoming today is $411,000. 55

Over the years, FCEMS did not account for the subsidy provided by donated labor and thus masked the full costs of operating ambulance services. The disappearance of donated or low-cost labor has forced Fremont County to face the full cost of its ambulance service and consider how to replace this subsidy.

Some participants at town hall meetings said, “We should not subsidize the ambulance service.” However, the ambulance service has always been subsidized, and because 9-1-1 transport revenues do not cover the true cost of EMS, FCEMS will continue to need a subsidy. Today’s question is how will Fremont County replace the subsidy of donated labor?

Understanding that 9-1-1 service has always been subsidized raises the question of whether or not EMS should be viewed as an essential community or county service that serves the public good. Essential services are services (such as law enforcement, schools and public works) that do not generate enough revenues to cover costs but are provided and subsidized for the public good. During town hall meetings, this topic was discussed with many participants voicing support for viewing EMS as a public good.

Finding 6: Volunteerism is no longer a long-term reliable means of subsidizing ambulance operations.

For more than four decades, ambulance service in Fremont County has largely been provided by ambulance services staffed with volunteers. For purposes of this report, volunteers are workers who not paid or paid other than regular wages and benefits. Assessment consultants have concluded that volunteerism in Fremont County is no longer a reliable means for subsidizing ambulance operations and should not be considered as a long-term staffing option. These findings are based on the consultants’ extensive study of EMS volunteerism, including work in other Wyoming communities.

The decline in volunteerism is the result of a perfect storm of economic, social and demographic changes. Economic survival in rural communities is forcing many rural residents to work more hours and travel farther to work. With the decline of Main Street and the growing regionalization of shopping, education, worship, recreation and healthcare, people’s loyalty and dedication to the local community is changing. The average age of populations in many rural communities is increasing, and rural young people often leave their communities for education and employment, and

55 The Independent Sector values the volunteer hour in Wyoming to be $23.46. This number describes what would need to be paid in terms of full time wages and benefits to replace a volunteer. See http://www.independentsector.org/volunteer_time
many do not return. Those who stay may not share the previous generations’ commitments to local causes.

Adding to this situation are increasing demands and expectations placed on volunteer EMTs and paramedics. The level of clinical care provided and the accountability for this care continues to increase. Public and government expectations for emergency services preparedness also have increased.

In recent decades, there has been a dramatic and continuing regionalization of rural healthcare resources and specialties, such as cardiac care, stroke care and trauma care. In many rural areas, this regionalization means fewer local resources, necessitated longer transport times, and more ambulance transfers of patients between healthcare facilities. All of this has left many rural EMS providers concluding that the demands are simply too much and beyond what a volunteer should be expected to provide. Former volunteers in Fremont County talked about the increasing demands of education, certification and training as factors in no longer volunteering. 56

In recent years, the decline in volunteerism has become critical in many rural communities. Leaders of rural ambulance services across Wyoming report shrinking rosters and dramatic decreases in the availability of EMS personnel remaining on their rosters. Efforts to recruit new volunteers cannot keep pace with those departing or donating less time.57

Across Fremont County, the assessment found fire departments, first responder groups, civic clubs and organizations all reporting declines in volunteerism. An attempt to resurrect volunteerism in Dubois has produced some interest, but according to a local leader, is not a long-term staffing option for the ambulance. When a 2011-2012 health survey in Fremont County asked about volunteering and community service:

- 37 percent of respondents reported spending no time performing community service;
- 38 percent volunteered 1-5 hours/month; and
- 14 percent volunteered 6-10 hours/month. 58

An ambulance volunteer could easily spend 40 hours per month or more.

56 Informant interviews
Future of Emergency Care: Emergency Medical Services at the Crossroads. Institutes of Medicine of the National Academies. 2006.
The decline of volunteerism in EMS is a national trend. A 2008 national study of the EMS workforce concluded that the decline in volunteerism will continue and is not likely to be reversed.\textsuperscript{59} A return to the days when Fremont County was able to subsidize its ambulance services with willing and eager volunteers is unlikely.

**Finding 7: Fremont County Commissioners want to minimize the public subsidy of EMS.**

A strong and consistent message from Fremont County Commissioners was a desire to minimize the public subsidy of EMS. During the assessment, in meetings and in interviews, four of five Commissioners advocated finding means other than raising a tax or using general funds to subsidize EMS. As the assessment concluded, Commissioners were exploring the privatization of EMS and other means of limiting the public subsidy of EMS.

**Finding 8: The current EMS system is not integrated.**

The revenue-producing activities of an EMS system include 9-1-1 ground transports, 9-1-1 air medical transports, ground transports between medical facilities, and air medical transports between facilities. Since the 1980s it has been understood that integrating the various revenue-producing activities of an EMS system is a powerful way to achieve operational efficiency and manage system performance and costs.

Some of these revenue-producing activities produce more revenue than others. For example, ground transfers between medical facilities usually pay more than transporting a patient from a scene to a hospital. Today, air medical transports pay extremely well.

Consider that approximately 5,000 mostly 9-1-1 ground transports are generating approximately $2 million in revenues in Fremont County today. There are also two competing private air medical services in the County splitting 600 air medical transfers and generating $12 to $20 million in revenues. The exact figure is not known as the services consider the revenues on their Fremont County operations proprietary.

The same payers that pay for ground ambulance services pay air medical services, but a generous fee schedule allows air medical services to be reimbursed at much higher rates. This lucrative marketplace accounts for the proliferation of flight services and the reason there are two for-profit services in Fremont County. Air Methods, one of the nation’s largest air medical companies that has operations in

Wyoming, billed its patients and payers an average of $40,766 per transport in 2014.60

Integrating various revenue-producing emergency medical transport activities is a powerful way to share costs and find efficiencies that allow higher-paying activities of the system to subsidize the lower-paying parts of the system. Spreading the costs and revenues through a system is common in healthcare and healthcare insurance where there is broad cost-sharing.

FCEMS is not integrated. The 9-1-1 ground ambulance is fighting for survival. In attempting to meet the demands of 9-1-1 calls, it is allowing better-paying transfers to be handled by air medical services. The air medical services are taking the best-paying parts of the system without absorbing the costs of the other parts of the system.

Finding 9: The EMS system in Fremont County can be redesigned to be provided at a low cost to the taxpayers, but this process will take 2-3 years, during which time EMS will need to be subsidized by public monies.

The EMS system in Fremont County has enough resources and revenues to create a system that will need little or no subsidy. Such systems are successfully being created in rural areas with challenges similar to Fremont County. An example of one such system can be found in Lassen County, California.

The designs of these systems are similar to utility models in which there are exclusive operating areas, performance expectations and system oversight. These models integrate various parts of the system to create financial efficiencies. Such systems may include contracts with private or public providers. The goal of these systems is deliver high value and quality at the lowest possible per capita cost to the population and area served. Designing such a system is complex and demands experienced know-how, time and the support of the local community.

Creating an efficient integrated EMS system in Fremont County would take approximately 24-36 months and necessitate the following:

- Use of public monies to subsidize FCEMS for the next 24-36 months;
- Engagement of an experienced rural EMS system designer; and
- Support from county government and community.

Finding 10: Recruiting and retaining a high-quality EMS workforce is a long-term challenge.

60 http://www.nytimes.com/2015/05/06/business/rescued-by-an-air-ambulance-but-stunned-at-the-sky-high-bill.html?_r=0
The most valuable and hard-to-replace assets of any ambulance service are the EMTs and paramedics who respond on calls each day. Today FCEMS is in danger of losing some of its best workers and continues to struggle to find and keep enough prepared and capable field providers for the following reasons:

- Fremont County’s distance from major metropolitan areas;
- Current workload on EMTs and paramedics (copious amounts of overtime and extended shifts because of workforce shortages and being short one ambulance crew);
- Perceived lack of support for EMS from county government;
- Current uncertainty about the future of the ambulance service;
- Lack of a paramedic program in the county;
- State requirements concerning the approval of EMT class offerings; and
- Unreasonable barriers created by Wyoming state rules concerning reciprocity for providers coming from out of state.

Assessment consultants found that the engagement and morale of the staff was being harmed by the uncertainty about their employment future and the county’s delay in making a decision concerning the future of EMS. EMTs and paramedics reported being the target of the public’s anger concerning the removal of the full-time ambulance crew from Dubois.

VI. Recommendations

Meeting the need for a sustainable, robust, high-quality EMS system in Fremont County will require the development of an integrated EMS system. Therefore, SafeTech Solutions offers the following recommendations.

**Recommendation 1: Accept that Fremont County government will continue to have a role in ensuring that Fremont County has an appropriate quality and quantity EMS system.**

While FCEMS is currently a function of Fremont County government, the county has not viewed EMS in the county from a systems’ perspective. There has been significant debate among County Commissioners about whether or not the county should even be involved in the provision or oversight of EMS. There is no state or federal mandate that Fremont County provide or oversee the provision of EMS. However, given the unique needs and the challenges associated with the long-term sustainable delivery of EMS in Fremont County, the system in the long-run would benefit from county government playing a role in the provision of EMS.

This recommendation does preclude Fremont County from privatizing parts of the system, contracting for services or creating a hybrid system – all of this is possible. It
simply means that the county should adopt the position that EMS is an essential service and provide oversight for the EMS system.

This recommendation can be accomplished by:

1. Viewing out-of-hospital EMS as a system and setting clear, broad performance expectations for EMS. The American Ambulance Association outlines a useful guide to the hallmarks of a high performing EMS system. The hallmarks are:
   
   a. Hold the Emergency Ambulance Service Accountable
   b. Establish an Independent Oversight Entity
   c. Account for All Service Costs
   d. Require System Features That Ensure Economic Efficiency
   e. Ensure Long-Term High Performance Service

2. Hiring or contracting for an experienced leader or organization to plan and manage the EMS system based on the performance expectations. The individual or contractor must be experienced in rural EMS systems and be trusted.

3. Allowing the system to be managed without micromanagement or interference beyond the broad performance expectations. Currently, Commissioners are unnecessarily interfering with the details of FCEMS without sufficient knowledge or experience in creating or sustaining a rural EMS system.

**Recommendation 2: Subsidize FCEMS to operate with five advanced life support ground units stationed in Lander (2), Riverton (2) and Dubois (1) for the next 24-36 months.**

To meet current 9-1-1 needs, Fremont County needs five full-time ground units. Distances and healthcare needs of the county’s population suggest that these units should provide advanced life support. The ambulance crew that has been removed from Dubois should be returned to Dubois.

Current 9-1-1 transport revenues will not support five units without a subsidy. Designing a system that could provide this level of services with low or no subsidy will take time (likely 24-36 months). To avoid further cuts in service, FCEMS will need to be subsidized while the system is redesigned.

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This subsidy could come from the county’s general fund, a sales tax, property taxes or a special taxing district. During town hall meetings, the County Commissioners committed to providing the public with a summary of the various taxing options.

**Recommendation 3: Immediately begin a re-design of the county EMS system with the goal of creating an integrated EMS system that maximizes efficiency and reduces the need for a public subsidy within three to five years.**

This recommendation can be accomplished by:

1. Obtaining the guidance and management services of a proven expert experienced in successfully creating and operating an integrated rural EMS system that provides high quality services with limited public monies;

2. Employing best practices in billing, staffing and deployment;

3. Integrating and maximizing ground transfer opportunities;

4. Maximizing revenues from a renegotiated Indian Health Services contract; and

5. Integrating maximizing air medical services.

Creating a rural EMS system with limited public money is possible but it takes expertise and time. Using experts who have designed and/or are currently operating high quality rural EMS systems with low or no public money subsidy will speed the process and enhance success.

Such a system design will likely include the following:

- Ensuring 9-1-1 ground operations are maximally efficient in staff scheduling and limiting overtime;

- Maximizing revenues from 9-1-1 billing and collections by ensuring billing rates as high as possible and billing and collections are using best practices;

- The negotiation of a new contract with Indian Health Services that narrows the gap between the costs and revenues associated with providing services to IHS patients;

- Creating an exclusive service area agreement that limits competition and allows for an integration of the interfacility transfer an air medical business with the 9-1-1 business;
• Maximizing opportunities to capitalize on revenues from transferring patients between health care facilities by ground ambulances; and

• Maximizing opportunities to capitalize on revenues from transferring patients between health care facilities by ground ambulances.

Recommendation 4: As the EMS system is redesigned and realizes efficiencies and increased revenue (within three to five years), reduce any subsidy provided by public monies.

An integrated EMS system (as described above) will create operational efficiencies and bring in more revenues. As financial performance improves subsidies provided by public monies should be eased appropriately.

Recommendation 5: Maximize the EMS system’s ability to recruit and retain a high quality, engaged workforce by creating an attractive work environment and reducing barriers to recruiting and developing employees.

Because of Fremont County's location and distance from major metropolitan areas, finding and keeping quality EMS workers will be an ongoing challenge.

Attention should be given to basic workforce planning (the current and future needs and the supply, demand for EMTs and paramedics) and the creation of a working environment where the pay, benefits, workload, schedule and organizational culture are inviting. Additionally, FCEMS should continue to work with the Wyoming Department of Health’s Office of EMS to reduce barriers to the recruitment of out of state EMS workers and enhance Fremont County’s ability to create its own education and develop EMS providers within the County.