



Advanced Life Support

**Report of the Mayor's Task Force
on
Advanced Life Support in DuPont**

December 2, 2016



Letter from the Mayor

Dear Citizens of DuPont,

Many of you know I had a serious medical event requiring Advanced Life Support (ALS) care. I was lucky in two ways: DuPont Fire has amazing firefighters that doctors credited with saving my life, and an ALS ambulance was nearby giving me a chance that I might not have had otherwise. While reason enough for some, perhaps, it is not the reason I have asked that the community discuss ALS.



When you call 911 our ambulance shows up with firefighters qualified to provide Basic Life Support, or BLS, care; we do not have dedicated ALS in DuPont. Our ALS response comes from a private company that is under no obligation to show up. The ALS response rate has consistently fallen to levels near that of a coin-flip as to whether it shows up or not. If they do, it takes over 15 minutes while our fire department arrives on-scene in a little over five.

After a series of community meetings talking about what level of care we have and the difference between ALS and BLS, I am convinced DuPont should embark on a discussion about our emergency medical response. The briefing we used is in Appendix B and is worth a read because it shows that BLS and ALS are vastly different. Many I've talked to didn't know we don't have ALS, and all agreed to talk about it.

To start, we needed a comprehensive report on the current state of our emergency Medical Services (EMS), what options are available to us and an expert recommendation on whether we need ALS and how we would deliver it if necessary. I assembled a Task Force made up of experts from DuPont and the region. I am proud to present this report of the ALS Task Force. They did a fantastic job preparing a source document to base our discussion on. I am grateful for their thoroughness, time and effort.

We are now entering the most important part of the discussion- the part where you come in. We will have community meetings, visit groups and spend a lot of time laying out how EMS works, what we have and what the Task Force thinks is the best path forward. I will deliver your thoughts and inputs to City Council so they know your desires.

I will work to make sure the community considers ALS from an informed perspective. If DuPont needs ALS, we will have to pay for it. Contrary to recent tax increases, your input and possible vote will decide if DuPont dollars will be spent in DuPont for services we receive.

I look forward to talking to you about this and I ask that you examine the issue carefully.

Sincerely,

A handwritten signature in blue ink, which appears to read "Mike Courts". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mike Courts

Executive Summary

DuPont Fire Department (DFD) started as an all-volunteer department in 1951 and hired its first two professional firefighters in 1998. Currently, DFD has a three-person response, providing BLS care. BLS care is non-invasive using Emergency Medical Technicians (EMTs) while ALS is invasive medicine practiced by Paramedics with advanced skills. DuPont is on pace to have 600 EMS calls in 2016 with almost 300 being ALS; response from private companies is less than 60% today and getting worse. Mayor Courts initiated a community discussion around ALS. He settled on the following process: education, professional analysis and a recommendation by an expert task force, a community discussion to discuss the results, a recommendation to City Council based on the task force and community inputs, and finally a decision to proceed or not by Council.

Mayor Courts formed the ALS Task Force drawing from a pool of experts. He charged it with examining ALS, not letting fire service needs play a part in the analysis and seeking out the best solution based on service level and cost. There are numerous legal ways to deliver EMS services in Washington. The Task Force discarded Regional Fire Authorities, an EMS Utility and District, Public Hospital District and public contract as viable ways to deliver EMS for various reasons. The Task Force focused on DFD providing the EMS response, annexing into West Pierce, using a private contract or a hybrid model.

After a rigorous process, the Task Force recommends that DFD provide ALS with transport using a five-person crew to respond. While not ideal, the Task Force acknowledges that a four-person crew would be adequate to start an ALS program although the better service and value lie with the former.

The Mayor will conduct public meetings, educate residents on the current state of EMS and gather their input. He will then present to City Council Task Force recommendations with citizens' inputs. Council will then decide to place on a ballot measure or not for a vote of the people of DuPont.

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Background

History of DuPont Fire Department and EMS in DuPont

The DuPont Fire Department (DFD) is a full-time, professional department with a 3-person response crew. It was founded in April, 1951 as a volunteer department providing fire and emergency medical responses. Today, the combination department, one that uses paid professionals and volunteers, continues to provide firefighting and medical services to 5.9 square miles and serves a population of just under 10,000 citizens. First response calls include:

- Fire Suppression (at a minimal level in initial response)
- Emergency Medical Services, (EMS) at the Basic Life Support (BLS) level
- Hazardous Material Responses at an Awareness Level
- Other public safety responses

Additionally, the department provides Inspections, Building Plan Reviews, and limited Fire and Life Safety Community Risk Reduction.

From 1951 until 1997, DFD was independent and staffed by volunteers. In 1998, the first two professional firefighters were hired as DuPont began to grow quickly. Then, in 2008, DuPont contracted with Lakewood Fire Department (Pierce County Fire Protection District 2) for full service including incident command response, prevention and public education services, training, vehicle maintenance, additional staffing depth when needed, Engine Company Paramedics and Advanced Life Support (ALS) transport services. With the implementation of contracted service, DFD ceased using volunteer reserves in 2008.



In 2009, due to fiscal restraints, the DFD transitioned from an Inter-local agreement with District 2 back to an independent, municipal department; DuPont lost Paramedics within the City and began using private companies for ALS care. With severely restricted resources, DuPont Fire Department reduced staffing from a 3-person minimum response to two, applied for a Federal Staffing for Adequate Fire and Emergency Response or SAFER grant, and was awarded resources to hire three grant firefighters in 2011. From 2011-2013, DFD moved to a 3-person minimum response.

DuPont was unable to keep the three grant firefighters but maintained 3-person response as a goal. Since 2013, DFD was able to add an additional Firefighter/EMT but remains dependent on private providers for ALS and ALS transports. Additionally, the Reserve Program was re-instituted in 2013 to augment staffing and provide limited opportunities to have a 4-person response; there are currently nine volunteers serving with DFD.

In 2013, DuPont had a 70% ALS response rate with an average response time from the private providers of just over 12 minutes coming from several companies' ALS units in the area. Since 2013 DuPont has had an increase in call volume of 24% (as of end of year 2015) and a reduction in ALS providers to a single company with only one unit nearby. Response rate to date

in 2016 has fallen to 54%, meaning when citizens need ALS care, there is almost a fifty-fifty chance that no ALS units will show up. ALS response rate has fallen to over 15 minutes as well.

Over time, DuPont Fire Department has been put in the unenviable position of transporting ALS patients without being able to treat them properly due to increased ALS calls with a reduced private response rate. DFD transports and treats BLS patients but transports ALS patients without ALS treatment when no private provider responds. DuPont Fire Department will continue to provide first response EMS and transport for BLS patients, and ALS patients as needed, plus fire response and other services.

Looking ahead to 2017, DFD will add another professional Firefighter/EMT bringing total personnel to a chief, eleven professional firefighters, and nine volunteer reserve firefighters. In 2017 DuPont will be replacing the ambulance with funds saved up for major purchases. These additions will not cause a tax increase, but instead come from fiscal planning and natural growth of the economy. It is expected that as the economy continues to grow, DFD will be able to add a Firefighter/EMT every one-and-a-half to two years.

Comparison of BLS and ALS

There is a significant difference between Basic Life Support and Advanced Life Support. In general terms the biggest difference lies in the advanced treatment that paramedics, also known as medics, are allowed to practice. Cardiac care is perhaps the best known, but many injuries and illnesses require immediate advanced treatment in the field.

BLS

“Basic life support (BLS) means that level of care that justifies ambulance transportation but requires only basic medical treatment skills. It does not include the need for or delivery of invasive medical procedures/services.” (WAC § 182-546-0001 (2016) Basic Life Support is DuPont’s level of care. Designed to provide first aid for less serious conditions, BLS consists of Emergency Medical Technicians (EMTs) with or without paramedic support. EMTs have completed more than 300 hours of classroom and practical education and are trained in “trauma care, cardiac and stroke care, CPR, advanced first aid, child birth and basic medication administration.” (Hicks, 2011) In Pierce County, EMTs can administer seven medications with an epinephrine injection, an EpiPen® application if the patient has one, and glucose level test being the only skin-breaking procedures allowed.



Conditions requiring a BLS level of care include such conditions as falls with minor injuries, flu-like symptoms, chronic back pain, psychiatric issues and other less grave medical emergencies. EMTs can also administer CPR, operate an Automatic External Defibrillator and put patients with suspected spinal injuries on backboards. This allows for a meaningful first response which greatly aids ALS care when it arrives. While not ideal, BLS teams can transport patients with ALS-level conditions if necessary, but cannot treat them on-scene or en route beyond BLS levels of care.

ALS

In Washington, State Law defines ALS as a “level of care that calls for invasive emergency medical services requiring advanced medical treatment skills.” (WAC § 182-546-0001, 2016) Advanced Life Support builds on BLS by adding at least one qualified paramedic to the response. EMTs still make up the bulk of care givers, but paramedics undergo much more extensive training: “more than 3,000 hours of training in aggressive cardiac life support, pediatric life support, severe trauma and more than 200 other life-threatening emergency medical conditions.” (Hicks, 2011)



While the additional training may not be outwardly noticed, a patient will likely note the biggest distinction between an EMT (BLS) and Paramedic (ALS) when being treated via the medic’s ability to start IV lines and administer medications. Paramedics can administer more than 40 types of drugs including medicine for diabetes, overdose, pain, cardiac, respiratory and other serious health issues. Paramedics coordinate on-scene care with an Emergency Room doctor and have the ability to begin lifesaving measures on the spot.

Current Emergency Medical Services (EMS) Response

No matter the public/private mix of service providers, an EMS system is expected to meet certain goals set by the National Fire Protection Association (NFPA) or local communities and departments. The NFPA sets optional standards for all facets of firefighting and EMS. In urban areas like DuPont, its goal 90% of the time is to have BLS arrive in five minutes with ALS arriving in nine (NFPA 1710, 2016). DuPont’s EMS response times are shown at left, in Figure 1. The City Council of DuPont has set a goal of six minutes 90% of the time for total response time. (DuPont Fire Department, 2016) In 2013, DuPont had 501 ALS calls and was served by six private ALS units in the area. To date in 2016, there has been only one private unit that has responded to DuPont calls. DFD is on pace to respond to over 600 EMS requests. As shown in availability rates at left through July 2016, DuPont is getting less ALS response, and when it does, response times for ALS are lengthy. As an example of continuing decline, ALS responded to less than 45% of ALS calls in September 2016 (DuPont Fire Department, 2016). Declining availability of ALS service and an unacceptable response time when they do come was the main driver in Mayor Courts’ call to action. (Courts, 2016)

ALS Discussion Process

Faced with declining ALS service as calls continue to rise, Mayor Courts looked into launching a community discussion around increasing ALS service in DuPont. It was immediately

evident that the cost of augmenting the ALS program was out of reach of current City resources. DuPont has a state allowed, voter-approved EMS property tax levy of \$.50/\$1,000 of assessed value. In 2016, the EMS levy is projected to generate \$711,834, and in 2017, \$730,065. (City of DuPont, et al, 2016) Meanwhile, EMS-specific expenditures are projected at \$963,365 in 2016 and \$983,915 in 2017. (City of DuPont, et al, 2016) Past budgets had the same outcomes: EMS expenses greatly exceeded the allowable levy revenues. In other words, the added levy is not sufficient to fund even a BLS response- a condition all fire departments in Washington know too well. The difference comes out of other General Fund revenues, competing with Fire Suppression and Prevention, Police, Streets, City Administration, Parks, Recreation and other City Services. With this in mind, Mayor Courts knew a community discussion was necessary.

He consulted with citizens, fellow elected officials, staff, and fire officials to discuss how to begin a community examination of re-establishing ALS in DuPont. Indisputable was the need to hold a public process where the community could decide if ALS is required in DuPont and if so, how it would be delivered. Mayor Courts settled on the following process: education, professional analysis and a recommendation by an expert task force, a community discussion to discuss the results, a recommendation to City Council based on the task force and community inputs, and finally a decision to proceed or not by Council.

Education

“ALS or BLS? That question is the Holy Grail of EMS.” (Wesley and Wesley, 2015) It is a question with no definitive answer. Numerous studies have tried to tackle the question of which EMS response better serves a patient. The only consistency in the data is that they are mixed and kindle great discussion in the EMS community.

One study conducted by a team of researchers from Harvard studied mortality rates after suffering cardiac arrest with treatment in the field and at a hospital. They used retrospective data in the form of Medicare billing records to compare outcomes. They found that BLS patients had a better survival rate than ALS patients in many cases. (Sanghavi, et al, 2014) While often quoted by those who favor a BLS response, the EMS community reacted immediately with important methodology questions.



Peer review immediately disputed their technique of using billing records which the researchers admitted were often incorrect (Wesley and Wesley, 2015), and the randomness of the sample because the research team applied filters, a form of data mining (Trembley, et al, 2015). EMS experts also questioned why their studied sample had ALS patients coming mostly from nursing homes, with patients being older and in poorer existing health than the BLS patients who were younger, more typically male, and mostly without pre-existing conditions. (Trembley, et al, 2015)

A study published in *The Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine* in 2010 reviewed 46 ALS vs BLS studies and tried to find consistent outcomes regarding the efficacy of either response. Their conclusions were that

ALS seems to improve survival in patients with myocardial infarction and BLS seems to be the proper level of care for patients with penetrating injuries. Some studies indicate a beneficial effect of ALS among patients with blunt head injuries or multiple injuries. There is also some evidence in favour {sic} of ALS among patients with epileptic seizures as well as those with a respiratory distress.” (Ryynänen, et al, 2010)

Before a community can discuss ALS, it needs a common base of knowledge. Understanding the differences between BLS and ALS, how ALS is typically delivered, the current state of EMS in DuPont and other information is necessary to make an informed decision. Not restricted to DuPont, most people have no idea what level of service we’ll get or who provides it when we dial 911. Many assume the response is some version of the TV show “Emergency!” where paramedics, doctors, firefighters and ambulance crew numbering in the tens or twenties will be working as a well-oiled team doing everything from providing cardiac care to splinting a broken arm. Not surprisingly, life does not imitate art in the world of EMS. Communities across the country are wrestling with EMS questions and DuPont is no different. Needing ALS care is not the time to learn that DFD provides BLS service, or that there is a good chance you won’t get an ALS response if you live in DuPont.

The briefing in Appendix B was provided at a Council meeting and three separate community meetings to help educate citizens on EMS services, what DuPont has today, and the process to embark on a community discussion. The briefing covers such topics as the fact that Pierce County, through its dispatch center South Sound 911, dispatches five personnel to non-life threatening ALS calls and nine to life-threatening calls. It describes each crew position's duties and why certain numbers of personnel are required for different types of ALS response. The briefing describes how DFD staffs our apparatus today and what type of coverage they provide. Cost recovery is covered as is the thought behind standing up an



ALS Task Force and its makeup.

ALS Task Force

Mayor Courts formed the ALS Task Force drawing from a pool of experts. While not a Citizen's Committee, it does have a number of DuPont citizens providing local perspective as the task force worked on recommending whether or not DuPont requires ALS, and if so, what the most economical and efficient manner would be.

The make-up of the ALS Task Force was deliberate in its constitution of unbiased experts in a number of different fields. First, there are no better experts when it comes to EMS in DuPont than the sitting chief and the DFD firefighters, so Chief Larry Creekmore and Firefighter Jon Roberts joined the effort. A historical perspective was necessary so a former DFD chief, Lee Chase was added. Needing outside experts with no direct ties to DuPont, Assistant Chief Todd Jensen of Graham Fire and Rescue, and Pierce County Paramedic Nate Jean were added. Staff support and representation for the Mayor was provided by the Executive Assistant Tiffany Graves and City Administrator. Finally, a public financing expert was necessary to review findings and make inputs as to ensuring operational recommendations were balanced against the reality that the public would be asked to consider cost, not just service; Mike Winkler, former Steilacoom Historical School District No.1 Board Member, filled that role.

The scope of the work desired by Mayor Courts was tightly restricted to the question of ALS in DuPont. With the fire service and EMS being so closely integrated, it was important that the research, analysis and recommendations would not crossover and attempt to solve fire shortfalls with an ALS solution. For instance, when the Task Force examined whether DFD should provide ALS, the need for five or six battalion chiefs was discussed. While a marvelous outcome for service delivery and a boon to fire protection and operations, ideas like that were quickly put aside because that many personnel are not needed for ALS. Additionally, Mayor Courts and Task Force were sensitive to the almost certain outcome that ALS would require the community to pay more. The analysis and final recommendation remain faithful to the charge that a solution would be one with quality service and value, would be safe for citizens and staff while remaining within the means of the community.

ALS Options in Washington

There are a range of options in Washington available to communities when it comes to providing EMS. From municipal departments, to districts, utilities and more, understanding the options is crucial to the decision making process.

Municipal Fire Department



DFD: 3 Career, 4 Reserve Firefighters

One way to deliver EMS is through a municipal fire department, the model DuPont uses today. The biggest advantage of this model is the efficiency of using one set of personnel to provide two distinct services saving money and resources for each type of service. Another money saving advantage is that municipal fire departments rarely pay separately for support services such as elected oversight, human



resources, finance, legal and other administrative functions. Also, many calls involve elements of both fire service and EMS, and having crews that work together all the time improves the quality of care compared to having outside agencies come and go depending on the emergency.

A very real problem is that fire and EMS compete in the General Fund with other critical services such as Police, Streets, Parks and Recreation, and the like. Municipal fire departments do not have a separate, dedicated line of funding beyond an EMS levy limited at a voter-approved \$.50 per \$1,000 of assessed value. This limit, set by the State Legislature, is outdated and insufficient to provide even a BLS-level of EMS service. In DuPont the Fire budget, with no separate funding stream, will be \$521,250 and the EMS budget as stated earlier will be \$983,915 with the EMS levy offset of \$730,605(City of DuPont, et al, 2016).



Funding from an aggregated fund also disconnects the direct path of taxes paid to the service provided, an important way to determine value. Municipal departments can't issue voter approved bonds for equipment, capital projects and the like by themselves but must go through their city if bonds are needed adding to the problem of competition among city services.

Overall, the efficiency gained by having the fire service provide EMS and the direct interaction and oversight by the city makes municipal fire departments an excellent way to provide EMS. Additionally, this option provides the most flexibility if a hybrid model is desired.

Fire District

Similar to municipal fire departments, fire districts in Washington usually provide both fire and EMS response. Fire districts are allowed a number of distinct types of funding: a non-

voted \$1.50 per \$1,000 fire levy and the same \$.50 per \$1,000 voted EMS levy that cities may utilize. Neither is sufficient to provide required services so most districts rely on other types of funding to augment basic levies. Unlike municipal departments, fire districts have the ability to levy voter-approved benefit charges usually based on the size of a building and/or its risk of fire. Districts may directly bond purchases if voters approve and may also charge additional levies, again if voters approve. The option of a fire district was discussed and analyzed in-depth by the Task Force. The mechanism to become a fire district in DuPont would be to annex into, or join, West Pierce Fire and Rescue.

The biggest advantage of a district is that voters set the funding and level of service and what they pay for EMS and fire services does not affect other necessary governmental services. That is also a districts biggest disadvantage: being separate from other services means separately elected fire commissioners and a completely different network of administrative support. To address these inherent inefficiencies, Washington allows Regional Fire Authorities.

Regional Fire Authority (RFA)

RFAs in effect, are nothing more than adjacent fire departments and/or districts that join together in an effort to gain efficiencies by sharing resources. An RFA is established by an interlocal agreement that must address certain legal requirements and be approved by voters of all jurisdictions. Once formed, RFAs for almost all intents and purposes act and function like districts. By combining administration, support services and re-allocating resources between former departments and districts, RFAs eliminate some redundancies in adjoining jurisdictions. RFAs were investigated by the Task Force as a way to provide ALS. Due to the time necessary to form one, it is not an appropriate method if ALS is to be provided in the near future. If DuPont establishes ALS, it would be on even footing with adjacent jurisdictions and this may be an excellent solution in the future.

Contracted: Public and Private



EMS can be contracted in Washington either through private companies or public providers. Typical models include contracting for fire and EMS together, or if a city or district has fire service but no ambulance service, it may choose to contract for transport with or without ALS. If a public entity does not provide ALS response, citizens may not receive that level of service without a specific contract for ALS response and transport. Lacking a contract, if there are no private companies doing business in the area,

citizens will not receive ALS care; this is the direction DuPont seems to be headed in as private ambulances are showing up less often for ALS calls. In fact, the lack of private, non-contracted ALS response has forced this very discussion.

The main advantage to contracting is being able to tailor service exactly to needs. As an example, Steilacoom engages Pierce County Fire Protection District 3 (West Pierce Fire and

Rescue) with a public contract for all services, Fife and Fircrest use the City of Tacoma for all services and Tacoma itself uses a private contract for BLS response and transport.

Contracting is an excellent way to provide ALS and was analyzed by the Task Force as a stand-alone method or as part of a hybrid solution.

EMS or Ambulance Utility

RCW 35.21.766 establishes the authority for cities to operate EMS and ambulance utilities when they are underserved and do not compete with private enterprise (2012). An EMS or ambulance utility must apportion 70% of the total cost of services to the General Fund and/or EMS levy meaning a utility for all intents and purposes can only charge fees equal to 30% of the actual cost. Additionally, case law has established that charges must be divided into availability (dispatch, equipment, personnel costs, etc.) and different or extra charges for when the service is used; it is unlawful to charge each household or business a set fee without dividing the charges (MRSC, 2016). Finally, discounts for certain users or classes of people are required further reducing available revenue. (RCW 35.21.766, 2012)

While a utility may appeal to some, their main purpose is to provide mostly underserved communities a way to receive EMS services when otherwise they couldn't. It can be argued that DuPont, an island of sorts surrounded by JBLM on three sides and Puget Sound on the fourth, would be suited for an EMS Utility. DuPont is not a good fit and doesn't have the administrative support necessary to make this a good option; the Task Force did not evaluate this as a way to provide ALS. With the mandated 30% revenue limit, court cases, mandatory discounts, and expense of running a utility, an EMS District makes much more sense.

EMS District

Under state law, EMS Districts may be formed by counties in unincorporated areas and in cities or towns with the legislative body's concurrence. (RCW 36.32.480, 2000) The county legislative body forms an EMS district by ordinance and after a public hearing. An EMS District is:

a quasi-municipal corporation and an independent taxing "authority" within the meaning of Article 7, Section 1, Washington State Constitution. Emergency medical service districts shall also be "taxing authorities" within the meaning of Article 7, Section 2, Washington State Constitution. (RCW 36.32.480, 2000)

In other words, it assumes the same rights, responsibilities and limitations of other districts in Washington like transit, public facilities, parks, etc. The governance board for the district will be the county legislative body or as established by interlocal agreement if a city or town is included.

Perhaps the best known EMS district is King County Medic One serving residents in King County and the major cities. It is a model of care and citizen participation that EMS providers around the world strive to attain. In fact it's routinely recognized as among the world's best when it comes to cardiac care and survival of cardiac events. (JEMS, 2013)

An EMS District in DuPont is not something the city is authorized to establish and is not a short-term solution. Even so, it is a powerful tool in providing excellent care, and could be a viable option in the future; the Task Force evaluated this option mostly in conjunction with the idea of ALS at a later date. It is also an option if a contract were to be used to bridge the time period until a district could be formed.

Public Hospital District

Public Hospital Districts are also permitted under State law to provide ambulance and first response services. (RCW 70.44.007, 1997) They are formed by a vote of residents after the legislative body of a county or a citizen initiative places it on the ballot; cities may not form Public Hospital Districts. Since cities cannot form these districts, Pierce County does not have one, and the benefits are geared more towards in-hospital care rather than first response, the Task Force did not recognize this as a viable option and did not analyze it.

Hybrid

There is no such thing in Washington State Law as “Hybrid” EMS. The term is used to connote the notion that different methods of legal EMS provision can be combined to form a community’s EMS program. It is a good way to exploit the strengths of various methods while avoiding the weaknesses. Many different hybrid models were examined by the Task Force. On the personnel side, Residents, volunteers, and “rent-a-medics” are ways some communities economically provide EMS services. While these volunteer or reduced-pay methods work for BLS, the additional requirements around ALS make all but the rent-a-medic not very useful. Principally, using DFD for some elements of EMS and contracting ALS with a private or public entity were the primary options assessed.

Methodology

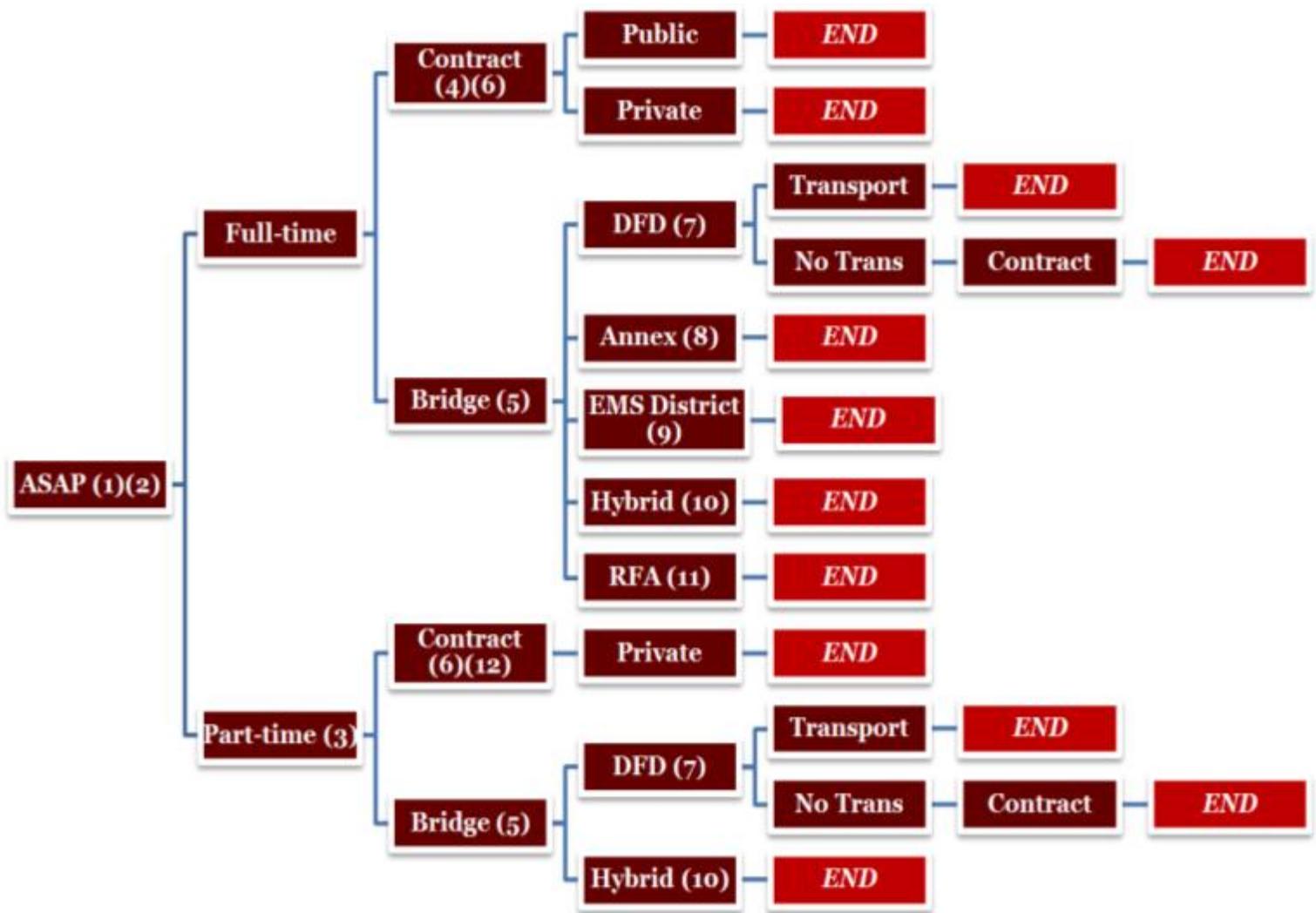
The methodology used by the ALS Task Force was based on an objective-based process where questions were asked and analyzed before coming to a conclusion. The first question was whether DuPont needed ALS. From that discussion, various paths to ALS were examined. In the following decision trees, the different options and paths are laid out showing what the Task Force considered.

(See Definitions in Appendix A)



ALS as Soon As Possible (see also definitions in Appendix A)

- (1) Starting ASAP requires a levy of some amount
- (2) Starting ASAP is impossible without contracting or a bridge model during the time ALS is stood up
- (3) Part-time would be ALS during peak call volume hours
- (4) Contract can be private, with a company or public through a fire district or other fire jurisdiction
- (5) Bridge can be a contract, rent-a-med, reserves, residents, etc.; cost between bridge models is negligible
- (6) No practical contract method exists for ALS w/out transport
- (7) DFD can do ALS with or without transport
- (8) Annexation would be into West Pierce Fire and Rescue (Pierce County Fire Protection District #3)
- (9) An EMS district likely would be similar to either King County or Thurston County Medic One models
- (10) Hybrid is a combination of various models of ALS
- (11) Regional Fire Authority
- (12) Public EMS contract options do not include part-time ALS service



ALS at a Later Date (see also definitions in Appendix A)

- (1) Starting at a later date may or may not require additional funding
- (2) Annexation would be into West Pierce Fire and Rescue (Pierce County Fire Protection District #3)
- (3) Regional Fire Authority
- (4) An EMS district likely would be similar to either King County or Thurston County Medic One models
- (5) Funding methods include a levy, pay-as-you-go, memberships and other mechanisms alone or combined
- (6) No additional funding beyond today’s levels; there are no options beyond growth of DFD over time
- (7) Part-time would be ALS during peak call volume hours
- (8) No practical contract method exists for ALS w/out transport
- (9) Public EMS contract options do not include part-time ALS service
- (10) Contract can be private, with a company or public through a fire district or other fire jurisdiction
- (11) Hybrid is a combination of various models of ALS

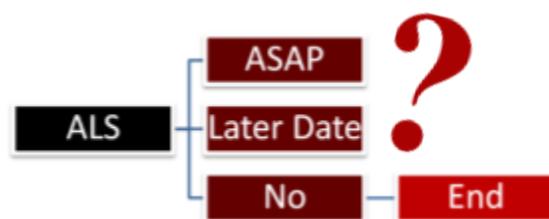


Analysis

The Task Force first tackled the question of whether or not DuPont needs ALS. As of July 2016, private ALS response was 58% with no backup or second-call ALS available. At the time of this report, response has further eroded to a rate of less than 43% in September.

Additionally, response times for private ambulances are much higher than for DFD: 15:21 vs 5:35 total time from call to arrival. Besides the issue of patients not receiving the proper level of care, not having an ALS response when required causes other issues. EMTs faced with life-or-death decisions are not properly trained, and sometimes have to debate base station doctors as to whether or not they can or should transport.

Some doctors are not aware that DuPont may have no ALS response, so they are hesitant to call for ALS transport with EMTs or they feel EMTs are not qualified to determine proper level of in-hospital care. This friction causes stress for first responders, and the patient's proper care can be delayed even more. In other words, if a patient needs ALS and the doctor won't allow transport, both the providers and person needing the care are put in a Catch 22 situation. With this in mind, the Task Force recommends ALS first response in DuPont with backup, or second call ability. Second call response is necessary if primary ALS response is otherwise occupied. The next questions, the harder ones, are when and how should DuPont provide ALS for its citizens?



For the same reasons driving the need for ALS, the Task Force recommends providing ALS as soon as possible. The feeling is that inadequate service should be corrected as soon as possible, not over time or when it becomes easier financially. If ALS is to be provided as soon as possible, moving directly to an RFA, or a district of some sort is not practical. DuPont could have a temporary bridge to arrive at an outcome of that type, but the period to negotiate, the interval to get the Pierce County Council and/or other agencies to do their part is not a time-friendly endeavor. Referring back to the decision tree, the next decision point becomes full-time or part-time service.

Part-time service brings ALS during peak call times and BLS aid at other times. While part-time service can save some money, much of the training, personnel necessary and administration of an ALS program are a sunk cost, or the fixed cost of providing any ALS at all. The main reason savings aren't on a straight line basis is that ALS is highly regulated and rightly requires intense oversight and continued training. So, the time ALS is in service actually becomes one of the less expensive aspects of an ALS program compared to the cost of providing any ALS at all. Additionally, Pierce County EMS leadership interprets WAC §246-976-390 to mean part-time ALS response is not allowed and thus is not an option. (N. Pancake, personal communication, September 20, 2016). More for the reason of losing too much value for the cost than for the interpretation of the WAC, the Task Force abandoned part-time coverage as an option. The Task Force then, came to the conclusion that DuPont needed ALS as soon as possible and it would make more sense to provide it full-time.

Full-time ALS in Washington can be realized through many models discussed earlier; the Task Force determined an EMS Utility and Public Hospital District were not realistic ways in any scenario to solve the ALS problem for reasons stated in the ALS Options section. Discussion focused on securing a contract, annexing into a fire district, establishing an EMS District or having DFD provide it with the realization that some final states of ALS response may need a bridge if an immediate start is preferred.

Contract

Public

A public contract simply means a municipality provides some or all EMS services through contracting with a fire district, another municipality, district or RFA. Sometimes, contracts are confused with mutual aid agreements. DuPont could contract with another city or a fire district like West Pierce. JBLM is not authorized to provide contract service, although they do participate in Pierce County EMS and assist DuPont through a mutual aid agreement for fire services; since we do not provide ALS, they do not send an ALS car under mutual aid.

The Task Force engaged West Pierce to see if they were willing to update a 2013 fire service contract offer of approximately \$1.3M with escalators each year to provide fire and EMS services. With the distance between the two agencies and the extra cost of providing ALS, both West Pierce and the Task Force determined it would not be a cost effective measure to contract with West Pierce. Additionally, simply contracting ALS without taking advantage of the efficiencies of simultaneously providing BLS and fire service proved to be an end state that West Pierce would be hesitant to provide. Since a public contract is not practical, a private contract was investigated.



(West Pierce Fire and Rescue. 2016)

determined

Private

Currently, Falck, a Danish company renowned for excellent service, is the only company providing private ALS service in the DuPont area. They have one ambulance, or "car", that serves a large portion of southern Pierce County. Because DuPont and Falck are not contractually engaged, DuPont receives ALS service as-available. In 2013, American Medical Response (AMR) and Rural Metro had six cars between them in the area which resulted in DuPont receiving ALS coverage roughly in line with the aforementioned NFPA standard. AMR

bought Rural Metro and in 2015, AMR ceased service in the area; Falck took over. Instead of six cars, Falck provides one. DuPont's ALS response has been steadily declining since AMR/Rural Metro left with less than a 50% response in September 2016. (DuPont Fire Department, 2016) Since private companies don't receive public tax dollars, to ensure proper ALS first response, a contract providing supplemental funds would be necessary if dedicated ALS is desired.

Falck provided a quote of \$1.2M to have a car in DuPont and provide a second car within 10 minutes 90% of the time with a 5% increase mandated each year. Rural Metro's response was \$1.4M per year with the same accelerator of 5% each year. Neither included BLS, so DuPont would have to maintain its current personnel and cost structure making the \$1.2M an additional charge to the current \$700k plus EMS budget.

If a contract with a private company is the method of ALS service in DuPont, we would not have the benefit of mutual aid. Because DuPont couldn't provide in-kind ALS services to other jurisdictions, they would not provide backup. So, while contracting a backup of 10 minute response 90% of the time drives up cost considerably, it is the only way to get a secondary unit when needed. If DuPont provides ALS and can respond in aid situations to other agencies, we would receive the same secondary coverage but with no extra charge from agencies like JBLM and West Pierce through mutual aid agreements.

Annex into Fire District

West Pierce is an excellent provider of fire and EMS services. One option for DuPont would be to annex into West Pierce and receive the same service that many in Pierce County receive. The main drawback for DuPont, the Task Force felt, was that West Pierce provides some services that DuPont would probably be better to utilize on a "pay-as-you-go" basis since the city does not usually have calls of this nature. They include deep water rescue, water rescue, high angle rescue and urban rescue.

The cost of being in West Pierce for DuPont in 2016 would have been \$2.83 per \$1,000 plus an EMS levy of \$.50 per \$1,000. If DuPont were to annex into West Pierce, the median citizens' monthly tax bill would climb from a current additional EMS levy of \$12.71 to \$84.63 using a median home price of \$305,000. (Zillow, 2016) In or out of the district, DuPont residents would still have to pay the base rate of property tax to the City. While West Pierce provides excellent value, with the geographic separation of DuPont adding to their cost, and the added cost of unnecessary services for DuPont, annexation is not a good option to establish ALS.

EMS District

EMS Districts are formed statutorily by counties and can be in conjunction with cities if through an interlocal agreement if desired by the cities. Their main attractions include standardized response and treatment, service to rural and underserved areas of a county, and the efficiencies gained by not having redundant administrative and oversight bodies.

North of DuPont in King County, and south in Thurston County, lie EMS Districts. Both are regional entities including unincorporated areas and cities. While King County Medic One continues to thrive, Thurston County Medic One has struggled financially to provide the required services, consistently outspending revenues as recently as 2013. (Thurston Regional Planning Council, 2013) Since DuPont is much smaller than either nearby district, forming one by itself would be cost prohibitive. A better outcome would be to have a district serve most if not all of Pierce County similar to King County Medic One. This would take a great deal of time and require lengthy negotiations if cities, fire districts and the like even wanted to pursue an EMS District locally. Outside DuPont's control, an EMS District is not a viable solution to providing ALS but could be an option in the future.

DuPont Fire Department Provides

Currently, DFD provides excellent BLS service averaging less than 5:45 to arrive after a call is made. Taking advantage of existing personnel and an existing EMS system is an attractive option. The Task Force looked at a number of variations of DFD providing ALS. They included with and without transport, and 3-person crews up to 6-person crews. The administrative and command oversight was also evaluated from including a Battalion Chief on every shift to none, an Assistant Chief or not, and a Medical Service Officer (MSO) being hired or left as an additional duty for an officer in DFD.

Quickly discarded were the outliers for each decision; similar to Olympic diving scoring, the high and lows of each option were usually discarded as not being adequate or being too much of a luxury. For instance, not having a dedicated MSO would not be feasible, as the certification requirements and reporting requirements would not be possible as an additional duty for a DFD officer. On the other hand, having a Battalion Chief for each shift, making a total of five to guarantee coverage was deemed to be too much of a luxury if the goal is affordable, sustainable ALS service. The Task Force settled on one Battalion Chief who would be in charge of training and command with oversight of the ALS program, an MSO charged with running the program, a supervising physician (required), and a minimum crew of five for ALS response.

To get to a guaranteed minimum staffing, extra crew positions must be scheduled. So, if a crew has to have at least six respond, for example, at times there would be seven on duty. This occurs due to sick leave, vacation and other factors making it necessary to hire enough personnel to cover shifts. When no one is on leave, an extra duty position would be available. The use of Rovers, or personnel not assigned to a specific shift but used to cover holes in the schedule help avoid over-manning and the use of overtime when crew are not present.

What is the proper crew mix for DuPont? A minimum crew of five is important owing to the amount of work that occurs on any ALS call; cardiac arrest ALS calls get a crew of nine dispatched in Pierce County. To understand what each crew position has to do on a call, a detailed explanation of various duties is included in Appendix B. Keeping in mind that ALS in DuPont with a small population and service area must be economically feasible, the Task Force has determined it would be possible but not desirable to staff ALS with a minimum response of four. A key assumption in that model is to ensure natural growth in city revenue is applied to DFD to hire enough personnel to get to a five-person response.

With the program staffing identified, the next question is how to get there. The two main paths are to grow into ALS over time, taking advantage of the natural growth in city revenue, or to seek additional funding and start it as soon as possible. The Task Force recognized that waiting 15-20 years or longer is not practical and does not follow the first recommendation that DuPont needs ALS as soon as possible. Starting as soon as possible could mean starting as soon as additional revenue is received and using the first year to conduct hiring and training. This time period between getting additional funding and starting ALS is a type of bridge. Another method to bridge the time gap is to use another method to start immediately.

Hybrid

Michael Lopez, former EMS Section Supervisor for the Washington State Department of Health said, “In Washington State, if you have seen one EMS system, you’ve seen one.” (Thurston Regional Planning Council, 2013) That is the best way to sum up a hybrid system of EMS delivery: they are unique and take many forms.

Most hybrid systems rely on part of the delivery to come from the fire service since they are already on duty and the skillsets between fire and EMS are complementary. To form a hybrid system in DuPont, resident firefighters, rent-a-medics, volunteers and the use of a contract were investigated as a way to provide the best EMS program in conjunction with DFD. Contracts can be formed in virtually any manner and were discussed earlier; they are the most viable option for DuPont in a hybrid system.

Resident Firefighters

Resident firefighters are qualified in firefighting and usually have a BLS level of EMS care, although there are some Paramedics in residency programs. Residents are paid less than professionals since as the name implies, they reside at fire stations in lieu of some amount of pay and/or benefits. The resident program is geared towards students in school who need a place to live and job experience as they study firefighting. In DuPont, the practicality of a resident program is limited due to a variety of reasons.

Our station could be used as full-time living quarters, but it is not built for that and the space necessary would have to come out of overnight quarters and some renovation would be necessary. Another obstacle to using residents is they are generally gone during the day to go to school. Since DFD already uses volunteers who work mostly at night and weekends, the benefit to make the building and operational changes to add residents is not a value-added plan. The Task Force does not consider this to be an option for EMS in DuPont.

Rent-a-Medic

“Rent-a-medics” are qualified medics who are hired when they are off-duty. They could be used either permanently or as a bridge to the final state of EMS coverage in DuPont. This type of service delivery would use off-duty Pierce County Paramedics considered to be experienced meaning properly certified and with a re-certification cycle completed or three-years’ experience in Pierce County. Shifts would be 24 hours but it is doubtful that there is enough availability among County medics to cover 24 hour operations in this manner. Currently, Pierce County has

said there is no legal way to provide part-time ALS. The key to using hired medics is that ALS would have to be allowed on a part-time basis for this to work.

Not insurmountable, but challenging nonetheless, union agreements would take some work with this model. Private paramedics are usually Teamsters, while the fire service is International Association of Firefighters (IAFF). Getting two different unions to do the same job in the same location is a hurdle because ultimately one union will feel as if they are losing work. For this reason, the Task Force suggests if rent-a-medics are ever used, it should hire only IAFF members to make things run more smoothly.

Overall, the Task Force did not think hiring off-duty medics would make sense for anything but a temporary bridge to permanent provision of EMS and even then a battle over part-time ALS would likely ensue.

Volunteers (Reserves)

DuPont currently uses nine volunteers calling them reserves. Reserves are used to augment professional crews but are not counted as manning for a minimum crew response. The logical question is why they wouldn't since some fire departments use all or a vast majority of reserves. DFD and other departments use full-time, professional firefighters for fire and EMS services. While there is nothing different between a paid (professional) firefighter and a volunteer with the same certifications and experience, finding reserves with a level of knowledge and experience commensurate with professional firefighters is difficult. Reserves typically have primary careers or are young people trying to gain experience to join the professional ranks.

If DuPont wanted to rely on volunteers for a bigger role, and as part of a minimum response crew, it is likely service would be denigrated; it is improbable that a crew of four to five properly qualified volunteers would be in the station at all times. Therefore, unlike DFD's use of in-station reserves today, expanded use of reserves would most likely mean some or all would be off-station mirroring other volunteer departments when they respond. Further, getting enough qualified Paramedics to volunteer the time necessary to have a qualified ALS response would be less likely, yet. So, response times would rise dramatically waiting for volunteers to arrive, and crews would be a patchwork of qualifications based on availability. These and other factors make it that a consistent ALS response could not be anticipated.

In the end, the Task Force discarded the use of volunteers as a practical way to deliver any dependable EMS care. Depending on reserves to consistently be available so that they can be counted for manning purposes is too large a risk for ALS service. Maintaining reserves is helpful for augmenting the department, though, so the current program should be maintained.

Bridge

A bridge is a temporary way to provide ALS while the permanent program is being built and implemented. Any type of certified ALS could be used, but volunteers, residents, rent-a-medics and contracts lend themselves for a short-term solution. Once again, a contract would be the most suited because the limitations described in the hybrid system aren't eliminated with a shorter time period.

Another question the Task Force addressed was whether there should be any bridge at all. It takes a good deal of time and money to set up an ALS program. Besides establishing physician oversight, personnel requirements for a new program include recruiting, hiring and training the Paramedics, Battalion Chief, Medical Services Officer (MSO) and additional Firefighter/EMTs if the fire department will provide ALS. Some pieces of the program would also apply if a hybrid method is chosen. If a contract method is used, there will still be a good deal of time necessary to negotiate terms. No matter the method, getting certified takes time as well with County, State and Federal requirements to learn and follow.

If DFD is to provide ALS, a bridge program would not be feasible from an economic standpoint. Proceeds from any additional revenues would have to be spent in-house with hiring and paying people even before the program starts. Funds for the bridge program would then most likely come from the General Fund, taking away from other services. The Task Force recommends not using a bridge, but instead using the resources and time to properly start ALS.

Funding and Cost

Washington provides a \$.50 per \$1,000 of assessed valuation for EMS services if the voters approve it. In DuPont, the levy generates consistently \$200,000-\$300,000 less than required. Adding to the shortfall by using General Fund revenue is not feasible and the difference can't be realistically absorbed by cutting costs from other departments. The answer lies in additional funding sources which include bonds and levies.

Bonds are instruments that cities can use to borrow money. Much like savings bonds, the cost of the bond is much lower than its face value and after a designated period of time, the bond comes due and is paid at the face value. This makes investors money on the interest and allows cities to have access to larger amounts of money than they would normally have. Bonds in Washington and most states come in two varieties: Unlimited Tax General Obligation, or voted bonds and Limited Tax General Obligation, also called councilmanic, or non-voted bonds. No matter how they came to be, what a city pays in interest depends on credit rating, amount of debt outstanding, revenue and other financial indicators.

Bonds are for capital investment, buying or building things in other words, while levies are for recurring costs most usually associated with ongoing maintenance and operations costs, including personnel costs. If a bond is to be established by a vote of the people, a super majority, or over 60% of the electorate with turn-out rate requirements must approve it.

Levies are not financial instruments but an increase in the amount of money citizens pay in property tax. The amount you pay is expressed as a monetary value per each \$1,000 of assessed value of your property; this is called the mill rate. Washington does not collect taxes by setting a mill rate, but rather Counties set the legal levy amount for a jurisdiction, then spread that amount equally over the entire group. For example, when you vote on a levy, you don't vote on a mill rate, but instead for an amount to be collected for a specific purpose. In this way no matter what the assessed value of individual properties are, the amount collected does not change. That is why even if your assessed value rises, you won't pay more in property taxes unless the rate rises or a new tax is added. In fact, if nothing changes, your tax bill usually goes down because new construction is almost always being added resulting in more payers to foot the amount required.

There are a number of different types of levies in Washington. EMS levies have their own rules, best explained below:

Cities and towns, counties, emergency medical service districts, public hospital districts, urban emergency medical service districts, regional fire protection service authorities, and fire protection districts have the authority to pass an EMS levy to be imposed for six years, 10 years, or permanently. Under current law, passage of an EMS levy requires 60 percent voter approval with a voter turnout of more than 40 percent of the number of people voting in the last general election. Alternatively, if the voter turnout is 40 percent or less, as long as the number of "yes" votes is equal to at least 60 percent times 40 percent of the number of people voting in the last general election, the measure will pass. (Cox, 2012)

In short, new EMS levies need more than 60% to pass with turnout requirements and can be established permanently, or for six or ten years. After an EMS levy is passed, as long as it remains in force without a break, subsequent renewals need only more than 50% to renew.

There are many more limits on property tax levies. For this discussion, a City may levy up to a maximum of \$3.375 per \$1,000 with all city levies included or up to \$3.60 if they are in a fire district. (Cox, 2010) Also, in DuPont since we are part of a library district, we have to subtract that levy from our total legal limit. In calculating how much levy capacity we have, we estimate DuPont's levy will be finalized at \$1.22 per \$1,000 in 2017 meaning the most DuPont can levy above what we do now is $\$3.375 - \$1.22 - \$0.50$ (library) = \$1.655 per \$1,000 if we are not part of West Pierce. If we were to join West Pierce, our limit would be $\$3.60 - \1.50 (base fire levy) - \$0.50 (library) - \$1.22 (current city total) = \$.38 capacity left over. As we compare the different costs of ALS service below, all options would be legally allowable.

If DFD or West Pierce provides ALS, the \$.50 EMS levy would be needed and is not included in the first set of tables showing the extra cost of ALS. If the City annexes into West Pierce, the total amount of \$3.13 includes fire services and BLS. Since the City does not collect fire-dedicated revenue, we would save the cost of fire service, \$470,865 (City of DuPont, et al, 2016) but we would not receive more revenue under annexation.

If a private contract is used, the \$.50 levy *can't* be used to offset the cost because BLS service and transport by DFD would still be required. The contract quote ALS provides for a crew of two. In that case, DFD would still have to respond to all EMS calls since two people can't handle even BLS calls alone. Contracting a crew of 4 or 5 on a private contract to handle all EMS would double or more the cost of private contract-ALS. For these reasons, the Task Force did not bother to ask for an all-inclusive EMS contract quote and the existing EMS levy would not be available to offset the cost of a contract.

The cost of an ALS contract is over and above what we pay today for BLS making the comparison to other methods an equal proposition. The first and fifth year contract costs are shown to illustrate the constant increase in cost for ALS using this method. The cost of contracted ALS passes the DFD 5 Person Response expenses after year five, and is about \$80,000 a year more than the DFD 4 Person Response from the start.

While not a major source of revenue, cost recovery from transport does affect the overall cost of the system. DuPont bills medical insurance for the cost of an ambulance transport and "balance bills" or bills patients for the remainder of charges after insurance pays. In DuPont, any remaining charges will be written off and not billed to citizens because they already pay for an EMS levy. Non-residents are billed the difference for full cost recovery. BLS calls are reimbursed depending on services provided and start at around \$600. According to a Los Angeles Times article, the Government Accountability Office reported in 2012 that Medicare beneficiary transports ranged from \$224 to \$2,204. (Zamosky, 2014).

Transporting about half the EMS calls today, DFD recoups around \$70,000 a year by charging for its BLS services. (City of DuPont, et al, 2016) If transports only doubled with DFD

providing ALS, and charging more for those transports, the City could expect to recoup around \$170,000 per year or about \$100,000 a year more than today.

Cost Charts

City Cost of Various Methods to Provide ALS

There is no cost included for the annexation option in the first chart because the City would not pay for EMS, only its citizens. Later charts will show the cost to citizens of being in West Pierce if desired. Again, first and fifth year costs for the lowest private contract quote are included to give a better picture of how it compares over time to other types of ALS provision. The additional revenue from added transports, around \$100,000, is not included in cost estimates for DFD. This is to ensure the cost of the program is not artificially low at the beginning. Any voted levy rate is a maximum and can be adjusted down by City Council in subsequent years if transport revenue lowers the program cost significantly.

If DFD provides ALS, an important note is that the start-up costs of an ambulance and medical supplies are not part of the computations. The City properly budgets replacement costs for major equipment. Therefore, money is already on hand to buy a new ambulance which will be purchased in 2017. The extra cost of ALS supplies compared to BLS supplies is around \$5,000 a year and will be covered by DFD’s normal budget. Neither of these expenses requires additional tax revenue.

4 Person ALS Additional Component Costs			
Item	Recurring Cost	Number	Total Additional Needed
Battalion Chief	\$135,000	1	\$135,000
FF/Paramedic	\$120,000	6	\$720,000
FF/EMT	\$110,000	1	\$110,000
MSO	\$125,000	1	\$125,000
Physician	\$30,000	1	\$30,000
Total		10	\$1,120,000

5 Person Additional ALS Component Costs			
Item	Recurring Cost	Number	Total Additional Needed
Battalion Chief	\$150,000	1	\$150,000
FF/Paramedic	\$120,000	6	\$720,000
FF/EMT	\$110,000	4	\$440,000
MSO	\$125,000	1	\$125,000
Physician	\$30,000	1	\$30,000
Total		13	\$1,465,000

Private Contract	
First Year	\$1,200,000
Fifth Year	\$1,458,608

New Levy Amounts

The next table shows the amount of new levy needed, what the resulting mill rate would be and what it would cost for the median home value of \$305,000 in DuPont.

ALS Levy Amounts (Median Home Value \$305,000)				
Model	Needed	Levy Rate	Yearly	Monthly
4 Person	\$1,120,000	\$0.79	\$240.56	\$20.05
5 Person	\$1,465,000	\$1.03	\$314.67	\$26.22
Private Contract Year 1	\$1,200,000	\$0.85	\$257.75	\$21.48
Private Contract Year 5	\$1,458,608	\$1.03	\$313.29	\$26.11

Citizen Cost

The final charts provide a chance for citizens to see what it would cost for ALS using the different models of service delivery. The cost of annexing into West Pierce is added here because there will be added cost to property owners (and presumably renters as pass-through costs). The non-EMS rate of \$2.83 per \$1,000 and total rate of \$3.33 with EMS include all levies and bonds- it is a true total cost of joining the district. Taxpayers in DuPont will pay the amount noted without a similar reduction in the City regular property tax levy. City savings of not providing fire and EMS services can't be applied towards some theoretical "bill" from a fire district. This is because the relationship a district has is directly with its taxpayers, not other jurisdictions. Also, the people of the entire district, not just individual cities like DuPont, separately elect commissioners to represent them. This means City Councils have no bearing on fire district activities or tax amounts.

To use the charts, select the value of your property to see what various models would cost. If your property value is not shown, add the proper columns together to get as close to your exact valuation as you desire. The first two charts show the net cost to taxpayers, or the amount above the current EMS levy on an annual and monthly basis. The current cost of the EMS levy is shown next, for reference. The last two add the current DuPont EMS levy to the new charges to depict the total costs per annum and month.

Citizens' Current \$.50/\$1,000 EMS Levy Cost								
\$.50 per \$1,000	Cost	Home Value						
		\$25,000	\$50,000	\$100,000	\$200,000	\$300,000	\$400,000	\$500,000
	Annual	\$12.50	\$25.00	\$50.00	\$100.00	\$150.00	\$200.00	\$250.00
Monthly	\$1.04	\$2.08	\$4.17	\$8.33	\$12.50	\$16.67	\$20.83	

Citizens' Annual Cost Above Current EMS \$.50 Levy								
Method (Annual Cost)	cost per \$1,000	Home Value						
		\$25,000	\$50,000	\$100,000	\$200,000	\$300,000	\$400,000	\$500,000
DFD 4 person	\$0.79	\$19.75	\$39.50	\$79.00	\$158.00	\$237.00	\$316.00	\$395.00
DFD 5 person	\$1.03	\$25.75	\$51.50	\$103.00	\$206.00	\$309.00	\$412.00	\$515.00
Annex	\$2.83	\$70.75	\$141.50	\$283.00	\$566.00	\$849.00	\$1,132.00	\$1,415.00
Private Contract Year 1	\$0.85	\$21.25	\$42.50	\$85.00	\$170.00	\$255.00	\$340.00	\$425.00
Private Contract Year 5	\$1.03	\$25.75	\$51.50	\$103.00	\$206.00	\$309.00	\$412.00	\$515.00

Citizens' Monthly Cost Above Current EMS \$.50 Levy								
Method (Monthly Cost)	cost per \$1,000	Home Value						
		\$25,000	\$50,000	\$100,000	\$200,000	\$300,000	\$400,000	\$500,000
DFD 4 person	\$0.79	\$1.65	\$3.29	\$6.58	\$13.17	\$19.75	\$26.33	\$32.92
DFD 5 person	\$1.03	\$2.15	\$4.29	\$8.58	\$17.17	\$25.75	\$34.33	\$42.92
Annex	\$2.83	\$5.90	\$11.79	\$23.58	\$47.17	\$70.75	\$94.33	\$117.92
Private Contract Year 1	\$0.85	\$1.77	\$3.54	\$7.08	\$14.17	\$21.25	\$28.33	\$35.42
Private Contract Year 5	\$1.03	\$2.15	\$4.29	\$8.58	\$17.17	\$25.75	\$34.33	\$42.92

Citizens' Grand Total Annual Cost								
Method (Annual Cost)	cost per \$1,000	Home Value						
		\$25,000	\$50,000	\$100,000	\$200,000	\$300,000	\$400,000	\$500,000
DFD 4 person	\$1.29	\$32.25	\$64.50	\$129.00	\$258.00	\$387.00	\$516.00	\$645.00
DFD 5 person	\$1.53	\$38.25	\$76.50	\$153.00	\$306.00	\$459.00	\$612.00	\$765.00
Annex	\$3.33	\$83.25	\$166.50	\$333.00	\$666.00	\$999.00	\$1,332.00	\$1,665.00
Private Contract Year 1	\$1.35	\$33.75	\$67.50	\$135.00	\$270.00	\$405.00	\$540.00	\$675.00
Private Contract Year 5	\$1.53	\$38.25	\$76.50	\$153.00	\$306.00	\$459.00	\$612.00	\$765.00

Citizens' Grand Total Monthly Cost								
Method (Monthly Cost)	cost per \$1,000	Home Value						
		\$25,000	\$50,000	\$100,000	\$200,000	\$300,000	\$400,000	\$500,000
DFD 4 person	\$1.29	\$2.69	\$5.38	\$10.75	\$21.50	\$32.25	\$43.00	\$53.75
DFD 5 person	\$1.53	\$3.19	\$6.38	\$12.75	\$25.50	\$38.25	\$51.00	\$63.75
Annex	\$3.33	\$6.94	\$13.88	\$27.75	\$55.50	\$83.25	\$111.00	\$138.75
Private Contract Year 1	\$1.35	\$2.81	\$5.63	\$11.25	\$22.50	\$33.75	\$45.00	\$56.25
Private Contract Year 5	\$1.53	\$3.19	\$6.38	\$12.75	\$25.50	\$38.25	\$51.00	\$63.75

Conclusions and Recommendations

The ALS Task Force realizes that the community will bear the cost of Advanced Life Support. The Task Force considered every legal method of ALS service delivery in Washington and settled on almost thirty different viable ways to get ALS in DuPont that were researched and discussed.

The first recommendation is that DuPont pursue ALS service as soon as possible.

There is no effective, dependable service today that resembles an ALS capable EMS system in DuPont. While private Paramedics are professional and provide quality care, they are employees of a business trying to make money. Over the last three or four years, private companies have left or reduced service in the area. Relying on service on an as-needed basis is an unnecessary risk for the community.

DuPont is separated from adjoining municipal and district EMS providers by JBLM and Puget Sound. The City has around 300 ALS calls per year without other profit-making opportunities like inter-facility transport in large numbers. Geography and business opportunity point to the likelihood that private providers will not be able to add more cars. It is doubtful private providers could build a response that could be considered adequate without a dedicated contract.

The stress of our EMTs having to deal with ALS incidents is also an unnecessary threat to patient care. EMTs are not certified to provide ALS care for good reasons, but they still know when a critical patient needs critical care. When it doesn't come, and they can't help a patient during transport, it takes a toll. Patient care and staff are both under strain in DuPont when EMTs are left to try and deal with ALS care when there is none available.

The next recommendation is that DuPont look to its own fire department to provide ALS. If cost is the most important factor, it is lowest with this model. The Task Force feels that value is more important than cost, however, and better outcomes in an efficient system should be the most important factor. This sentiment might seem to point to annexing into West Pierce, but cost for service seldom needed in DuPont and geography make this a less desirable choice.

It cannot be understated how important time is when talking about ALS care; not having it or having to wait 15 minutes or more is deadly. DFD response time means ALS could be on-scene in five or six minutes or less. Although the Task Force constrained itself to ALS, there are other benefits in fire and BLS that the citizens of DuPont will receive if DFD staffs ALS. A contract will not utilize efficiencies but will instead suppress them since the citizens would still have to pay for BLS and will not receive indirect benefits of their own fire service providing care.

DuPont using a bridge to provide ALS immediately or waiting to implement ALS was the next area considered. Due to the cost of hiring and training, it makes more sense to take a year to build an ALS system. If a contract is used, the entire proceeds of a new levy would be needed meaning DFD would not have enough resources to start ALS. While not ideal, the Task Force

thinks jumping into ALS without proper funding early is worse than waiting one more year and standing ALS up correctly. Additionally, it is contemplated that some DFD Firefighters will be upgraded to Paramedics. That is an added expense not quantified, but should not cause undue hardship unless the levy is used immediately to fund a private contract.

The Task force recommends DFD provide ALS service with transport. Once ALS is certified, mutual aid departments can be on scene in the time limits or close to the response times for secondary support that the private contract quote called for. Our primary mutual aid department is JBLM, next is West Pierce. If our ambulance is unavailable, mutual aid can provide ALS until the ambulance returns, a private car arrives or in some cases, mutual aid will arrive with its own ambulance. Since secondary response will be adequate with mutual aid, it makes sense that DFD be able to transport ALS patients and recover some costs. Finally, while it would never pay for an ALS program, transport revenue is an important method for all EMS systems of recouping some costs.

The Task Force feels the proper minimum crew response for DuPont is five. In larger departments, adjoining stations can respond together meaning the crew in each station does not have to be as large. A crew of five is still small when it comes to involved calls like cardiac care, but it would be adequate and cost effective. As a comparison, if a private contract were used, DFD would respond with three and the private would send two. Since we do not have a call volume requiring two stations, the primary response should be no less than five.

A matter of great debate, crew size was analyzed at length. The Task Force discussed a 6-person response. It would be better than five and is not an overly large response, especially for a City with one station. However, when the personnel requirements and costs were considered, it became evident that a 6-person crew would be too luxurious if proper care at a reasonable cost was the goal. Perhaps the biggest debate around crew size came when the Task Force looked at a four-person response.

A four-person response is the bare minimum required with all the duties to accomplish on an ALS call. The main reason this option was considered is that to get a 4-person response, staffing would have to be such that at times five people would be on duty. The reserve program would also help to get the response up to 5-person more often. ***Also, if the City commits to growing naturally into a five-person response, a four-person response to start the ALS program would be acceptable.***

To be clear, the Task Force recommends a 5-person minimum crew. Most of ALS costs are sunk, meaning they have to be paid. The price differential compared to the greatly improved service with just one more person responding should be considered; the Task Force feels it is a good value since the vast majority of costs borne by citizens will have already been paid at the four-person level.

Way Ahead for Community Discussion of ALS

The next steps for ALS in DuPont are community meetings, the Mayor's presentation to Council, Council's decision on whether citizens will be allowed to vote on EMS, then a vote by the people if that is the decision of City Council.

Community meetings will be held as a way for citizens to learn the current state of EMS in DuPont. The community should understand why the Task Force recommends a DFD five-person response with transport. The meetings will also provide an excellent opportunity for residents to provide feedback; most importantly, it is the citizens who will ultimately decide whether DuPont provides ALS and how that would be delivered. The Mayor has laid out a path where he gathers citizen input and will deliver it with the Task Force recommendations to City Council.

The Task Force recommends stressing to the community that nothing in the discussion around ALS should be construed as a threat. Nothing changes if ALS is not selected for DuPont and no one's BLS response will be worse than it is today as long as the basic EMS Levy continues to be passed in the future as it has in the past.

The Task Force urges the residents of DuPont, the Mayor, and City Council to seriously consider starting ALS as soon as you can. Further, even if no clear consensus emerges from the community, it is hoped that City Council will provide voters a chance to give a definitive answer as to whether DuPont should have ALS.

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Appendix A: Definitions

Advanced Life Support (ALS)- level of care that calls for invasive emergency medical services requiring advanced medical treatment skills.

Annex- the legal term for joining a fire district; used in this report to mean join a fire district

ASAP- As Soon As Possible

Basic Life Support (BLS)- level of care that justifies ambulance transportation but requires only basic medical treatment skills. It does not include the need for or delivery of invasive medical procedures/services.

Benefit Charge- charge levied by some fire districts based on size of building and fire risk

Bridge- generic term used to mean a temporary method to get from a non-ALS state to providing ALS; it can be a contract, various personnel procedures or can simply be the time between funding and becoming operationally able to provide ALS

Contracted ALS- ALS service guaranteed by contract vs. having ALS provided on an as-available basis; can be public or private in Washington

EMS- Emergency Medical Services

EMS District- a municipal corporation in Washington with individual taxing authority that provides EMS to its citizens; also known as a junior taxing authority

EMS Utility- a utility in Washington is an entity formed to provide allowable services for a group of people bounded by service area not necessarily corporate limits; allowed to charge fees but not taxes; a direct benefit from the fees charged to a service received must be established; an EMS Utility is formed to provide first-response EMS

EMT- Emergency Medical Technician (BLS care)

Fire District- similar to an EMS District but provides fire services to include EMS

Full-time- 24 hours a day

General Fund- unrestricted fund that municipalities use to provide non-utility services like public safety, streets, quality of life, parks and recreation, etc.; revenue comes from unrestricted sources like property and sales tax, licensing, non-utility fees, etc.

Grow Into- over time municipal resources naturally grow providing opportunity for expanded services without additional forms of revenue like levies, tax increases, fees, etc.; DFD has historically been able to add 1 firefighter every 1.5-2 years meaning it would take 15-20 years to grow into ALS without additional revenue

Hybrid- various legal methods that together can be combined to provide ALS

Medic- Paramedic

MSO (Medical Services Officer)- An officer, usually a Captain or higher, who is responsible for the coordination, reporting and administration of the ALS program

Mutual Aid- mutual aid is when two jurisdictions provide like services and use each other to provide supplemental fire and/or EMS service; terms frequently written and agreed to in a mutual aid agreement, although one is not strictly necessary; until ALS is provided in DuPont, there will be no mutual aid with adjoining jurisdictions

Municipal Fire Department- a legal method for municipalities to provide fire and EMS services; a majority of funding comes from the General Fund if no special levies or bonds are passed by voters

Paramedic- authorized to provide ALS care

Private (Ambulance, EMS)- a private corporation either non-profit or for profit not associated with public entities properly certified and authorized to provide EMS services in Washington

Public (Ambulance, EMS, Fire Service)- a public entity properly certified and authorized to provide EMS services in Washington

Public Hospital District- another Washington district formed to provide hospital services including EMS care

Regional Fire Authority- an entity in Washington formed by adjoining fire service agencies; formed by interlocal agreement voted on by all citizens in affected jurisdictions; usually formed to save on administration and overhead costs; after formation almost exactly like a fire district

RCW- Revised Code of Washington; compilation of state laws passed by legislature, required by the constitution, or passed by the people of Washington via citizen referendum

Part-time- periods of peak ALS calls

Transport- act of moving patient from field to hospital; ambulance service

WAC- Washington Administrative Code; regulations of state agencies issued by statute that, like RCWs, are primary law in Washington

Appendix B: Community ALS Discussion Kickoff Briefing



INTRODUCTION

- **DuPont Fire Department is the primary first responder for all medical emergencies, motor vehicle collisions, rescues, and fires within its city limits.**
- **Approximately 80% of 911 calls in DuPont are medical in nature**



INTRODUCTION

- **Pierce County recognizes and closely regulates two levels of emergency medical care that are capable of providing ambulance transport to patients.**
 - **Basic Life Support (BLS)**
 - **Advanced Life Support (ALS)**



LEVELS OF CARE

Basic Life Support (BLS)

- **Emergency Medical Technicians (EMT)**
 - Provide basic first aid
 - Administer oxygen
 - Utilize basic non-invasive airway aides
 - Provide CPR
 - Operate an Automatic External Defibrillator (AED)
 - Place patients with suspected spinal injuries on a backboard
 - Ability to administer 7 different medications

Current level of care provided by DuPont Fire Dept



LEVELS OF CARE

Advanced Life Support (ALS)

- **Paramedics: work directly under a licensed physician**
- **In addition to the EMT scope of practice, a Paramedic may:**
 - **Place and secure advanced airways into a patient's windpipe (Intubation)**
 - **Interpret cardiac EKG rhythms and identify life threatening arrhythmias**
 - **Utilize defibrillation, cardioversion, and external pacemaker on cardiac patients**
 - **Perform additional procedures at request of receiving hospital**



LEVELS OF CARE

Advanced Life Support (ALS) cont.

- Activate specialty teams at local hospitals for time sensitive conditions such as heart attacks, strokes, and significant traumatic injuries
- Initiate IV lines for immediate medication administration
- Provide advanced trauma care such as re-inflating collapsed lungs and creating surgical airways
- Ability to administer 41 different types of medications for symptoms relating to:

Cardiac	Diabetes
Respiratory	Overdoses
Pain	Seizures
Blood Pressure	Allergic Reactions



LEVELS OF CARE

Conditions requiring ALS

Chest pain
Difficulty breathing
Signs of stroke
Abnormal vital signs
Fainting/unconscious
Medication reaction
Allergic reaction
Severe abdominal pain
Severe dehydration

Conditions requiring BLS

Flu like symptoms
Falls with minor injuries
Chronic back pain
Headache
Minor bleeding/injuries
Psychiatric problems
Dizziness
Minor abdominal pain
General weakness

List is not all-inclusive. These requirements are mandated by Pierce County EMS Agency



CURRENT RESPONSE PROCEDURE

- **When 911 is called for a medical emergency the dispatch center will send:**
 - **1 DuPont fire engine (2 FF/EMTs)**
 - **1 DuPont BLS ambulance (1 FF/EMT)**
 - **Check availability and request that an ALS private ambulance respond**
- **If the patient's illness meets BLS criteria and staffing levels permit, DuPont FD will transport them.**
- **If no private ambulance is available (42% of the time YTD) then DuPont FD will transport the patient via BLS regardless of the severity of illness.**



NEIGHBORING RESPONSES

- Neighboring Fire Districts Typical Response

- **Non Life Threatening ALS Call**

- 1 Fire Engine (2 FF/EMTs, 1 FF/PM)
- 1 ALS Fire Dept Ambulance (1 FF/PM, 1 FF/EMT)
- *Total of 5 personnel*

- **Life Threatening ALS Call**

- 2 Fire Engines (4 FF/EMTs, 2 FF/PMs)
- 1 ALS Fire Dept Ambulance (1 FF/PM, 1 FF/EMT)
- 1 Battalion Chief (EMT certified)
- *Total of 9 personnel*



PERSONNEL ON ALS CALLS

Non Life Threatening ALS Call (i.e. broken leg)

Minimum number of personnel required is 3

Captain: Requests additional resources as needed, provides scene safety/control, retrieves equipment, readies gurney and ambulance for transport, assists crew as needed.

Firefighter/EMT: Obtains vital signs, places patient on oxygen, assists with splinting leg, preps supplies for paramedic, assists with lifting and moving patient

Firefighter/Paramedic: Assesses patient and obtains pertinent info, starts IV, administers pain and other needed medications, acquires EKG to monitor condition, prepares patient for transport





1) Captain

- Consoles loved ones
- Gathers facts from witnesses
- Obtains patient's medical history
- Documents patient's medications
- Overall scene management

2) Firefighter EMT

- Readies equipment and supplies for crew
- Checks blood sugar levels
- Checks for response of patient's pupils
- Monitors vital signs

3) Firefighter Paramedic

- In charge of patient care
- Delegates assignments to crew
- Operates the defibrillator
- Interprets EKG rhythm
- Delivers "shock" when indicated
- Obtains medical direction from Emergency Room physician
- Completes patient care report which is vital when transferring care to Emergency Room

4) Firefighter EMT

- Maintains open airway
- Ventilates patient with bag valve mask
- Provides supplemental oxygen
- (Rotates with #5 every two minutes)

5) Firefighter EMT

- Performs CPR
- Monitors for return of pulse
- (Rotates with #4 every two minutes)

6) Firefighter Paramedic

- Establishes IV or IO access
- Administers lifesaving cardiogenic medications which can potentially restart the heart
- Intubates and secures airway of patient
- Monitors patient's CO2 level and assures effective ventilations

**Life Threatening ALS Call
(i.e. Cardiac Arrest)**

Minimum Number of Personnel Required 5-6

STAFFING LEVELS

DuPont Fire Department's Current Staffing Level

- 3 rotating shifts (A/B/C each working 48 hour shifts)
- Typically 3 Firefighter EMTs on duty
- Occasionally, 1 additional Firefighter EMT or Reserve EMT
- Rarely, as few as 2 Firefighter EMTs on duty

Normally, if a patient is transported by DuPont FD it takes 2 personnel leaving only 1 to cover the entire city and essentially rendering the fire department out of service.



COST RECOVERY

- When DuPont Fire Department transports a citizen, medical insurance is billed and out of pocket costs are written off by the city as part of the EMS levy.
 - This method allows the city to offset some costs of maintaining emergency medical services without creating an additional hardship to the citizens
- If a citizen is transported by a private ambulance company, their medical insurance is billed and the patient is responsible of all remaining out of pocket expenses
 - Typical associated costs can start at \$600 for BLS care to \$1,500 or more for ALS care



CURRENT ALS RESPONSE

- ALS services are provided by private companies
 - Falck
 - Rural Metro
- ALS has been unavailable for almost 42% of calls in 2016 year-to-date through October

	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Number of EMS Calls	501	528	559	460
Calls Dispatched as ALS*	43%	45%	45%	45%
ALS Availability Rate	70%	83%	76%**	59%
ALS Response Time***	12:25	19:07	20:26	15:42
DuPont FD Total Time	5:56	5:35	5:45	5:15

*Calls may be upgraded or downgraded upon patient assessment
(actual percentage of ALS estimated to be much higher)

**Started at 95% in January, down to 55% by December 2015

***Does not include time from being dispatched to reporting en route: could be 1-5 minutes



GETTING ALS IN DUPONT

- **Community discussion on current EMS state and process to examine ALS**
- **Assemble expert Task Force**
- **Task Force Report to Mayor**
- **Community Meetings**
- **Task Force Communicates Results to Council**
- **Council decides path to take**
 - Do nothing
 - Pursue a course of action



ALS TASK FORCE

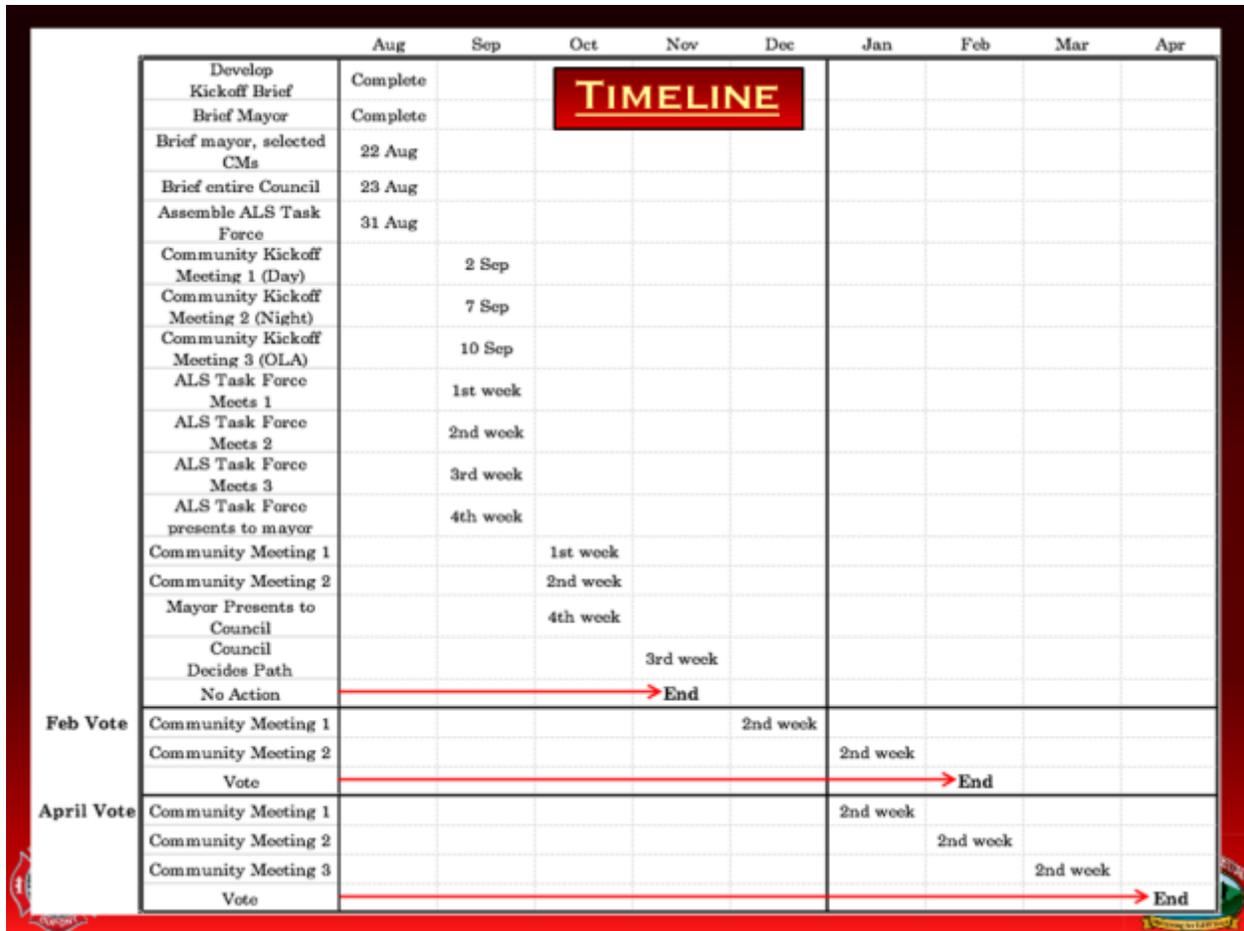
- **Between 5-7 experts**
 - DFD Chief (Larry Creekmore)**
 - Outside Chief (Todd Jensen, Graham Fire and Rescue)**
 - DFD FF/EMT (Jon Roberts)**
 - Former DFD Chief (Lee Chase)**
 - Pierce County Paramedic (Nate Jean)**
 - Public Funding Expert (Mike Winkler)**
- **Not a citizen's committee, although some DuPont residents will be on it**



ALS TASK FORCE

- **Explore different models (some, not all options)**
 - Not pursue ALS
 - Grow into it over time
 - DuPont Fire Dept provides
 - Contract (public or private)
 - Abandon DuPont Fire Dept and annex into district
 - EMS District or Utility
- **Produce analysis report**
- **Recommend a course of action and good alternative(s) if any**





QUESTIONS?

Questions Later?

Contact:

- **Mayor Mike Courts**
- **Chief Larry Creekmore**
- **Firefighter Jon Roberts**
- **City Administrator Ted Danek**

