

## Ambulance Study Committee



### Executive Summary

November 30 2015

#### Purpose

The Tyngsborough Ambulance Study Committee has been established to review, evaluate, and make recommendations regarding the addition of an ambulance as a Tyngsborough Fire Department responsibility and service. The Ambulance Study Committee is tasked with evaluating the benefits and consequences and make recommendations that benefit the residents and taxpayers in improved public safety, services, cost savings, and other benefits that may be realized by the town, fire department and citizens of Tyngsborough.

#### Findings

The Study Committee has determined it is operationally and financially feasible for the TYFD to operate a Basic Life Support (BLS) transporting ambulance beginning in FY 2017. The cost and benefit of a TYFD based ambulance service is summarized here.

#### 1. Medical Emergencies - Demand is Increasing

- Medical emergencies are the most common emergencies the Fire Department responds to on a daily basis. In FY 2015, TYFD/Private EMS responded to 1286 medical emergencies, 3.52/day.
- In FY 2016, 1325 medical emergencies will require 9-1-1 response, by FY 2020 it will be close to 1500. In FY 2016, 737 people will be transported to a hospital from Tyngsboro, in FY 2021 it will be 871.

#### 2. Revenue Projections - Money is leaving town

- \$450,000 in ambulance billing revenue is available in FY 2017
- By FY 2021, ambulance revenue will exceed \$500,000 annually, possibly higher if reimbursement rates increase with inflation.
- Currently, all revenue is shared between the private ambulance provider and ALS from Lowell.

#### 3. Fire Department Based Ambulance - Future of our FD

- 2 new FD positions will enable TYFD to operate a BLS ambulance 24/7
- FD Ambulance, equipment and operating costs paid for by new non-tax revenue
- FY 2017-FY 2021 will return revenue from ambulance operations to our FD, improving service and the safety of our residents and firefighters.

## Current EMS System

A 9-1-1 call for a medical emergency is managed by the police department, who dispatch the appropriate resources based on the type and nature of the emergency. Currently, the TYFD responds as the 'First Responder' to quickly assess the person's emergency, begin BLS level care including use of an AED. The BLS ambulance is provided by Trinity Ambulance service, sends a unit staffed with 2 Basic EMT's. If Advanced Life Support (ALS) is needed, a hospital based non-transporting ALS unit responds from Lowell to intercept and take over treatment in the back of the BLS transporting ambulance. The patient's insurance is billed by the transporting BLS ambulance or Lowell ALS service, the town receives a small compensation from private ambulance for dispatching their unit to 9-1-1 calls.

- In FY 2015, TYFD/Private EMS responded to 1286 medical emergencies (3.52/day)
- All Medical Emergencies in town are responded to by TYFD with FFs and EMT's.
- Currently, the FD provides all BLS services during an emergency up to transporting the patient to the hospital.
- Only the transporting service may bill insurance, thus only Trinity and Lowell ALS receive payment for emergency care services.

## Call Volume

From FY 2011 through FY 2015, the town has seen a steady increase in the number of medical emergencies requiring a response and ambulance transport to the hospital. As our town's population grows, so do medical emergencies increasing demand on our public safety resources.

### Historical Call Volume FY 2011- FY 2015

	<u>FY 2011</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>
TOTAL 911 CALLS	1379	1534	1272	1313	1473
TOTAL EMS	960	976	985	1039	1286
TOTAL TRANSPORTS	<b>631</b>	<b>599</b>	<b>677</b>	<b>663</b>	<b>716</b>
BLS TRANSPORTS	494	418	491	495	567
ALS TRANSPORTS	137	181	186	168	149

- 8% increase in responding to medical emergencies annually
- 3.52 TYFD/Private EMS responses/day in FY 2015
- 13.4% increase in ambulance transports to a hospital from FY 2011 – FY 2015
- Average 63% of total responses end up as a transport during FY 2011-FY 2015
- 75% of transports are BLS, 25% ALS

*Note: edited 30 NOV 2015 to reflect Total 911 calls as well as TYFD/Private EMS responses.*

**Projected EMS Call Volume FY 2017 – 2021 (3% annual increase)**

	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>
Total Responses	1364	1405	1447	1491	1536
Total Transports	774	797	821	846	871
<b>BLS Transports</b>	580	598	616	634	653
ALS Transports	193	195	202	211	218

- 41 additional medical emergencies each year based on conservative 3% annual increase.
- 1.96 transports/day in FY 2015, project to be 2.34/day in FY 2021 (19.6% increase)
- 3.52 responses/day in FY 2015, project at a minimum 4.21/day in FY 2021
- From FY 2017 to FY 2021, 4,033 people will be transported to a hospital from town, 23% increase from prior 5 year period.

**Financial Projections**

Reimbursement for ambulance transport varies based on the type of insurance carrier the patient has. Medicare pays a flat rate based on a national fee schedule, which is far less than a private HMO pays for the same emergency. The payor mix for Tyngsborough is based primarily on demographics. In addition, only one transporting provider can bill insurance. When ALS is provided by a hospital based service performed in the back of a BLS transporting ambulance, ALS bills the patients insurance and reimburses the BLS ambulance at an agreed to rate. These projections are based on a conservative growth of 3% in transport volume year to year with a payor mix found in communities with similar demographics. 85% collection rate is used based on similar sized communities.

**Revenue Projections FY 2017-2021**

	<u>Rates</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>
Total Transports		774	797	821	846	871
<b>BLS Transport</b>	<b>0.75</b>	580	598	616	634	653
ALS Transport	0.25	193	195	202	211	218
BLS Collectibles		\$335,191	\$345,247	\$355,604	\$366,272	\$377,261
ALS Reimbursement	\$250.00	\$48,366	\$48,750	\$50,500	\$52,850	\$54,436
Mileage (7 miles)	\$7.27 - \$30.00	\$65,718	\$67,690	\$69,720	\$71,812	\$73,966
<b>Total Revenue</b>		<b>\$449,275</b>	<b>\$461,687</b>	<b>\$475,825</b>	<b>\$490,935</b>	<b>\$505,663</b>
Un-collected	.15 (BLS+miles)	-\$60,136	-\$61,940	-\$63,799	-\$65,713	-\$67,684
Billing Service	.05 (BLS+miles)	-\$20,045	-\$20,647	-\$21,266	-\$21,904	-\$22,561
<b>Total Net Revenue</b>		<b>\$369,094</b>	<b>\$379,100</b>	<b>\$390,760</b>	<b>\$403,318</b>	<b>\$415,418</b>

- \$369,094 net revenue is available to offset first year of operation in FY 2017.
- Projected revenue based on conservative 3% increase in transports year to year.
- \$580 is average reimbursement rate for all payers per transport in FY 2017.
- Net revenue based on same rate of reimbursement from FY 2017-2021, yet increase is expected in private insurers.
- Affordable Care Act expected to increase rate of collection during FY 2017-2021, thus increase net revenue.

## Capital Expense

The town will need to purchase or lease an Ambulance and equipment and supplies needed to meet MA State Regulations for BLS licensure. A type I configuration is recommended and most commonly used by local Fire Departments, able to accommodate two patients if required. A capital cost of \$200,000 is anticipated. Life expectancy is 5 years. A lease to purchase financing option is used with an annual \$44,000 principle plus interest payment totaling \$218,000.

- \$200,000 capital expense for a new Ambulance
- Equipped with non-disposable equipment (stretcher, lights, siren, oxygen, defibrillator)
- 5 yr Lease to purchase option, principle and interest will average \$43,600/yr
- \$25,000 for initial portable emergency medical equipment and supplies

## Operating Expense

FD personnel costs will increase with staffing a BLS ambulance 24/7. A Hybrid model composed of both paid and on-call personnel is the most cost effective method for staffing an ambulance while maintaining safe staffing levels at the FD. The Ambulance will always have 2 FF/EMT's at Station One manning the unit 24/7.

## Projected Operating Costs FY 2017-2021

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Personnel	\$287,000	\$295,610	\$304,478	\$313,613	\$323,021
Equipment and Supplies	\$3,750	\$3,750	\$3,750	\$3,750	\$3,750
Fuel + Insurance	\$1,300	\$1,380	\$1,400	\$1,453	\$1,508
Vehicle P&I	\$46,000	\$44,800	\$43,600	\$42,400	\$41,200
Initial EMS Supplies	\$25,000	0	0	0	0
<b>Total Expense</b>	<b>\$363,050</b>	<b>\$345,540</b>	<b>\$353,228</b>	<b>\$361,216</b>	<b>\$369,479</b>

- \$287,000 increase in FD personnel costs year 1
- Add 2 FF/EMT's, results in 2FF, 2 FF/EMT's, 1 Officer during peak periods during week and weekends.
- Call FF positions maintained, increase availability, increase recruitment efforts.
- Initial EMS supplies are replaced on a one for one basis at receiving hospital

## Profit & Loss

Revenue generated from BLS transports will cover the costs associated with operating the FD ambulance and increase manning by 2 FF's for improved public safety while meeting NFPA standards for fire ground safety.

## Projected P&L FY 2017-2021

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>Total Transports</b>	774	797	821	846	871
<b>Total Net Revenue</b>	\$369,094	\$379,100	\$390,760	\$403,318	\$415,418
<b>Total Operating Costs</b>	\$292,050	\$300,740	\$309,628	\$318,816	\$328,279
<b>Total Fixed Costs</b>	\$71,000	\$44,800	\$43,600	\$42,400	\$41,200
<b>Profit/Loss</b>	<b>\$6,044</b>	<b>\$33,560</b>	<b>\$37,532</b>	<b>\$42,102</b>	<b>\$45,939</b>

Revenue is dependent on number of transports and rate of reimbursement from private and public insurers.

- FY 2017 revenue covers startup and operating costs for 1<sup>st</sup> year, our most expensive.
- TYFD needs at least 762 total transports in FY 2017 (first year) to cover costs and any uncollected bills. Projections of 774 transports during this period are more than adequate.
- In FY 2021, transports will exceed 870/yr generating over \$415,000 in net revenue, returning over \$45,000 to the service.

### **Implementation**

Initial funding, credentialing, payer contracts, Advanced Life Support (ALS) service contract, and administration (Fire Department & Accounting) processes need to be addressed. It is estimated to take 2 to 3 months to establish initial credentialing, payer contracts and provider agreements. The ambulance can be purchased off the state bid list, with a lead time of possibly another 2-3 months. Therefore we suggest that we plan on a 6 month startup period before we are eligible for state BLS licensure and active service.

- 6 month startup period anticipated
- Administrative structure within FD leadership
- Order ambulance and equipment off state bid list
- Medicare and Medicaid contracts, ALS agreement, 3<sup>rd</sup> party billing, mutual aid
- BLS licensure with MA DPH, inspections, service zone plan modifications
- Launch service prior to terminating private provider contract, overlap coverage

### **Benefits**

The Fire Service has evolved from a fire suppression only service, to becoming the primary first responder to medical emergencies in all communities. Nationally, more than half (55 percent) of the incidents to which fire departments respond are categorized as EMS. The TYFD/Private EMS responses are approaching 80% medical calls, resulting in 55% EMS transports, increasing each year. Benefits to a FD operated ambulance:

- New revenue source to support our public safety services without a tax subsidy, keeps revenue in town.
- Increase quality of service and safety of our residents and firefighters
- Expands FD personnel to staff an ambulance, also brings FD staffing levels to acceptable, and safe, minimum for firefighting operations.
- Familiarity with town, residents, and roads that the private ambulance provider lacks. The FD personnel have more “ownership” in the town and it’s residents well-being.
- Teamwork is essential during life threatening emergencies. A TYFD staffed ambulance will ensure all emergency providers work together, are familiar with TYFD equipment, communication system, and command structure.
- FF/EMTs will provide emergency care from our residents home to the receiving hospital, not transferred to outside EMT’s.
- With FDs excellent response times, the FD ambulance will arrive at a residents home in the shortest time possible.
- Decrease the need to respond a fire engine to medical calls, less wear and tear on vehicle, less fuel.
- Increase call FF recruitment by having the ambulance service as an incentive to otherwise less interested candidates.

### **Recommendation**

The Ambulance Study Committee recommends to start implementing a FD operated ambulance service with a go-live start date in July 2016 (FY 2017). This recommendation is supported by the Fire Chief, Board of Fire Engineers, and Finance Committee.