



Neenah-Menasha Fire Rescue

Memorandum

TO: Chief Al Auxier, D/C Steve Deleeuw

FROM: A/C Mike Sipin

DATE: November 15, 2010

RE: Dive Team Proposal

I write this memo requesting permission to begin the formal process of creating a dive rescue team under NMFR's delivered services.

In the last year alone, there have been several incidents requiring a dive team; both involving winter/ice conditions and summer open water conditions. During an incident on January 19, 2010, NMFR crews were first on the scene of a small dump truck that had fallen through the ice with an unaccounted for driver. It was determined the driver was still inside the truck. It was approximately 10-15 minutes before the first dive team (Oshkosh Fire) arrived. The outcome, in terms of survivability chances, could have been different if immediate dive capability had been present.

The Winnebago County Sheriff's Department currently provides this level of service. The Sheriff's Department has accepted the fact that they are unable to meet the critical response time requirements necessary to affect a successful rescue through dive operations. This in no way reflects any lack of professional ability; rather it is due simply to response times. Discussions have been held with Lt. Greg Cianciola on the potential creation of an NMFR dive rescue unit. Lt. Cianciola, along with Sheriff Brooks and incoming Sheriff Matz, have offered the Sheriff Department's support in NMFR providing this service.

"Submersion-related injuries are the fifth leading cause of accidental death in the United States" writes Farrokh Sohrabi, Md.ⁱ Dr. Sohrabi goes on to state that unconsciousness can result in water temperatures of 70° F or less during long submersions. Long submersions are considered 4 to 6 minutes or longer. Water conducts body heat away from the body up to 26 times faster than cold air of the same temperature.ⁱⁱ The Centers for Disease Control (CDC) reported 3, 582 fatal drownings occurred in the U.S.ⁱⁱⁱ Given this information, response times are extremely critical if a successful outcome is to be achieved. According to the United States Search and Rescue Task Force (USSARTF), exhaustion or unconsciousness may occur in cold water within 30-60 minutes when temps are between 40-50° F. Similar times in water temps of 32.5-40° F are cut to 15-30 minutes.^{iv}

The intent of this endeavor is to in no way create a duplicated level of service offered by the Sheriff's Department. The goal is to provide the initial rescue capability in the event of future water incidents.

Any degree of diving beyond the initial rescue, ie recovery, would be transferred to the Sheriff's Department.

The goal is to raise funds through either private donations or grants for the required equipment and training. Any private funding will be maintained in the Public Safety Fire Trust Fund account.

There are three attachments accompanying this memo. They show the projected equipment costs, projected training costs, along with the projected start-up costs associated with providing this level of service. Projected annual maintenance costs would be approximately \$2000. This figure is based on numbers provided by the Winnebago County Sheriff's Department and the Oshkosh Fire Department. I recommend that new line items be placed into the Special Operations account, as diving is a special operations component.

The attached projected training and equipment costs display figures for up to 12 personnel trained to the Dive Rescue 1 Standard, per Dive Rescue International. Any and all training and equipment would be identical to what the Winnebago County Sheriff's Department and the Oshkosh Fire Department are currently using in order to maintain consistency. The figures also represent a "worst-case" scenario depicting all selected members beginning at the same level. Therefore, actual costs could be lowered depending on existing qualifications from interested personnel. There are too many variables to determine in order to produce an "exact" figure. This is dependent on the specific personnel selected for the team, days the training is offered, what shift is working, etc.

Mountain Bay of Appleton has indicated their willingness to deliver the PADI classroom certification components on-shift, saving overtime amounts. Any actual dive time will need to be accomplished at one time, requiring some overtime.

Dive Rescue International (DRI), based out of Florida, can conduct a class with a minimum of 10 on site, saving travel costs. In a class of 10 paid, DRI will offer one free spot; 11 paid, two spots; 12 paid three; and up to 15 paid with 5 free spots. Maximum class size is at 20. This format will also help to save some funding.

We have acquired copies of SOG's from both Oshkosh Fire and the Winnebago County Sheriff's Department. In addition, the Sheriff's Department and OFD are entering into talks on working closer together as a true county dive team. The goal would be to enter into this program if permission is granted to begin the fund-raising efforts.

I encourage any questions you may have with regards to this project. Thank you for your support.

ⁱ "Cold Water Near Drowning and Hypothermia", Farrokh Sohrabi, Md., Suite 101.com online website, www.suite101.com/content/cold-near-drowning-hypothermia-a75024, October 24, 2008, accessed November 15, 2010.

ⁱⁱ "Immersion Hypothermia and Near-drowning", Scuba-doc website, <http://scuba-doc.com/hypoth.htm>, accessed November 15, 2010.

ⁱⁱⁱ "Drowning", Suzanne Moore Shepherd, MD, MS, DTM&H, FACEP, FAAEM and William H. Shoff, MD, DTM&H, eMedicine website, <http://emedicine.medscape.com/article/772753-overview>, June 28, 2010, accessed November 15, 2010.

^{iv} "Cold Water Survival", United States Search and Rescue Task Force website, www.ussarft.org/cold_water_survival.htm, accessed November 15, 2010

DIVE TEAM QUESTIONS

- What is the Sheriff Department's role? **The Winnebago County Sheriff Office (WCSO) role is to provide dive rescue capability in the county.**
- What is the Sheriff Department's operating budget for paying for expenses with OFD? **The WCSO does not supply any level of funding to the Oshkosh Fire Department in order to cover, or assist with expenses associated with the OFD dive program.**
- Would like a better understanding of operational costs in the future for the Dive Team. **See attached.**
- Will the Sheriff Department pay for anything other than the boat that they currently supply to us? **The WCSO does not have the budgetary capability to pay for anything other than boat-associated equipment.**
- What other items (equipment) does the Sheriff Department supply to us for water/ice calls? **The WCSO typically respond with at least one deputy to serve as the IC, or in a Joint Command with NMFR during ice/water rescue calls.**
- Is the Sheriff's Department responsible for any costs associated with the dive team since they have jurisdictional control over the water? **No, they have no responsibility since they provide this level of response for the county. But as already indicated, the response times are the primary weak point in the program.**
- Did the Sheriff's Department or Winnebago County contribute any money to OFD's start up costs when they started their dive team. **No. OFD has provided 100% of the costs through their budget process.**
- What is the life expectancy of the suits? **An actual "lifespan" per say cannot be indicated. Rather, the lifespan is directly related to the use, care, and maintenance of the suits. The more time the suits have in the water, the better, as water can act as a lubricant. The contaminants in the water can affect the life of suits. Zebra Muscles are more prevalent now and can cause damage to suits. The rubber seals for the neck and wrists will be the most common component that will need replacement. OFD still has some of their original suits in service that were purchased 10 years ago. Each suit has had the seals replaced a couple of times.**
- Where did we get the maintenance figures? Are they all based on OFD's experience? **The maintenance figures were initially based on both OFD and the WCSO figures. Since both have more equipment, the costs identified in the initial proposal were reduced to better reflect the amount of equipment NMFR is proposing to purchase. The figures do also include a "safe zone" in the event unidentified costs (repair or replacement) are experienced.**

**Proposed Start-up Cost
for
NMFR Dive Rescue Team**

Cost's		
Equipment	\$	24,262.00
Training Wages	\$	31,200.00
Training Tuition	\$	11,220.00
Equipment Rental	\$	1,380.00
Pool Rental	\$	240.00
Total Cost's	\$	68,302.00

**Proposed Annual Cost
for
NMFR Dive Rescue Team**

Equipment maintenance	\$	1,016.00
Equipment Replacement	\$	1,125.00
Pool Rental 6hours annually @ \$20 hr.	\$	120.00
Training Wages - Training would be completed on normal duty days.	\$	-
Total Annual Cost	\$	2,261.00

Proposed Training Cost for NMFR Dive Rescue Team

Class Description	Training Wages		Total Team		Class Tuition		Total		Time Requirement Per Member
	Per Member	Training Wages	Training Wages	Per Member	Per Member	Team Tuition	Team Tuition		
PADI Open Water I & II *	\$ 1,040.00	\$ 12,480.00	\$ 395.00	\$ 4,740.00	26 hours				
PADI Ice Diver	\$ 600.00	\$ 7,200.00	\$ 165.00	\$ 1,980.00	15 hours				
Dive Rescue International I **	\$ 960.00	\$ 11,520.00	\$ 375.00	\$ 4,500.00	24 hours				
Total Training Cost	\$ 2,600.00	\$ 31,200.00	\$ 935.00	\$ 11,220.00	65 hours				
* Equipment Rental			\$ 35.00	\$ 420.00					
** Equipment Rental			\$ 80.00	\$ 960.00					
Pool Rental Cost	\$20 per hour	Need pool for 12 hours	\$	\$ 240.00					

All divers shall participate in minimum of 4 training dives per calendar year. One of which shall be a pool dive to show basic competencies and one ice dive. Total "down" time for the 4 total dives shall not be less than 80 minutes.

Annual Pool Rental Cost for 3 training days in the pool to demonstrate basic competencies. \$40 per day Total of \$120.

Note we do have a number of members who are already certified in one or more of the PADI courses which would reduce the actual cost of train wages and tuitions.

Dive Rescue International will travel and put on a class with 10 students min.

Proposed Equipment Costs for NMFR Dive Team

Equipment	Cost each	Total Cost (4) sets
BCD	\$ 400.00	\$ 1,600.00
Dry Suit (with cuff rings, thinsulate liner, gloves, glove liners & hood)	2,395.00	9,580.00
Regulator & Octopus	576.00	2,304.00
Gauges	207.00	828.00
Face Mask	800.00	3,200.00
Tank	180.00	720.00
Weights (belt & ankle)	190.00	760.00
Fins , Dive Knife, Harness & Beacon	205.00	820.00
Hard Wired Intercom (two sets)	2,225.00	4,450.00
Total Equipment Cost	\$ 7,178.00	\$ 24,262.00

The above equipment list mirrors OFD and WCSO equipment so that all equipment is interchangeable.

**Proposed NMFR Dive Team
15 Year Equipment Outlay**

Year	Equipment	Cost
1	Misc. Search Equipment	\$ 250.00
Total for Year 1		\$ 250.00
2	Mask, Fins, Weights,Belt Snorkle, Knife, Harness #1	\$ 400.00
Total for Year 2		\$ 400.00
3	Misc. Search Equipment	\$ 250.00
Total for Year 3		\$ 250.00
4	Misc. Search Equipment	\$ 250.00
Total for Year 4		\$ 250.00
5	Misc. Search Equipment	\$ 250.00
Total for Year 5		\$ 250.00
6	Mask, Fins, Weights,Belt Snorkle, Knife, Harness #2	\$ 400.00
Total for Year 6		\$ 650.00
7	Tanks #1,#2	\$ 360.00
Total for Year 7		\$ 860.00
8	Dry Suit #1	\$ 2,391.00
Total for Year 8		\$ 2,391.00
9	Fins, Weights,Belt Snorkle, Knife, Harness #3	\$ 400.00
Total for Year 9		\$ 1,200.00
10	Face Mask #1	\$ 800.00
Total for Year 9		\$ 1,200.00
10	Tanks #3 & #4	\$ 360.00
Total for Year 10		\$ 610.00
11	Misc. Search Equipment	\$ 250.00
Total for Year 10		\$ 610.00
11	Fins, Weights,Belt Snorkle, Knife, Harness #4	\$ 400.00
Total for Year 11		\$ 1,200.00
12	Face Mask #2	\$ 800.00
Total for Year 11		\$ 1,200.00
12	Hard Wired Com. System	\$ 2,225.00
Total for Year 12		\$ 2,225.00
13	BCD #2 & #3	\$ 800.00
Total for Year 12		\$ 2,225.00
13	Gauges #3 & #4	\$ 400.00
Total for Year 13		\$ 3,591.00
14	Dry Suit #2	\$ 2,391.00
Total for Year 13		\$ 3,591.00
14	Regulators #1 & #2	\$ 1,140.00
Total for Year 14		\$ 1,140.00
15	Face Mask #3& #4	\$ 1,600.00
Total for Year 14		\$ 1,140.00
15	Face Mask #3& #4	\$ 1,600.00
Total for Year 15		\$ 1,600.00

These figures do not reflect inflation cost changes.

The above is our best anticipation on equipment replacement needs based on (15) fifteen year average. The total for the fifteen year replacement is \$16,867.00. This is averaged out to be \$1,125.00 per year . Please note that there are some years that we will be near \$4,000.00 and there are several years we are under the original \$1,000.00 amount.

PROPOSED MAINTENANCE COSTS

Equipment in need of Annual Maintenance	Number of units	Cost per	Total cost
Face Piece Annual Service	4	\$100.00	\$400.00
Regulator/ Octos Annual	4	\$70.00	\$280.00
BCD	4	\$25.00	\$100.00
Dry Suits	4	\$50.00	\$200.00
Tank Visual Inspection	6	\$6.00	\$36.00
Tank Hydro (5 years)	6	\$35.00	\$210.00
Total Cost With Hydro years			\$1,226.00
Cost Without Hydro years			\$1,016.00