

# Water Supply Operations 1

Mancahca Fire/Rescue  
Travis County Emergency Services District #5



# Water Supply Scenarios

There are several different scenarios in where we can obtain a water supply for firefighting operations. The type of water supply we obtain depends on several factors such as:

- Size of the fire problem
- Growth potential of the fire
- Available tank water
- Available hydrant supply
- Tender availability
- Distance to a sustained water supply

Water Supply Operations	
WS Ops 1	Tank Water
	Engine Nursing
	Hydrant Supply (Forward and Reverse Lay)
WS Ops 2	Tender Nursing
	Engine/Tender Nursing Shuttle
	Dump Tank Shuttle

# Tank Water

At the majority of incidents, initial attack will be supplied by the onboard water supply of the first arriving pumper.

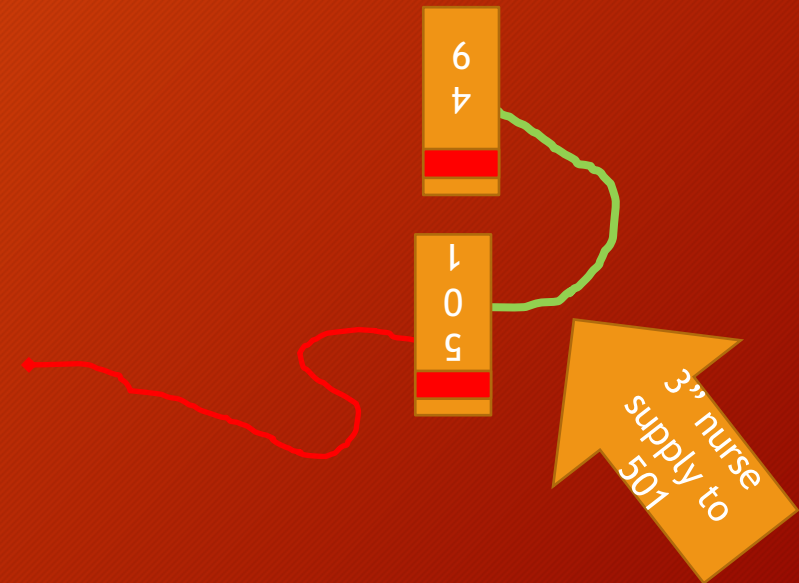
## ESD5 Apparatus:

- Engine 501 - 750 gallons
- Engine 511 - 1000 gallons
- Tender 501 - 3000 gallons

# Tank Water to Engine Nursing Operation

A common water supply practice for an offensive attack at a single family residential structure and similarly sized commercial fires is to initiate fire attack on tank water and to then have the second arriving engine nurse the attack engine with its water supply.

Depending on the engines, this gives the initial attack immediate access to 1000 to 2000 gallons of water.



# Hydrant Supply

In a hydranted area, if the fire problem is greater than what can be handled by a simple engine nursing operation, the third or fourth due engine may be called upon to lay a supply line to or from a hydrant.

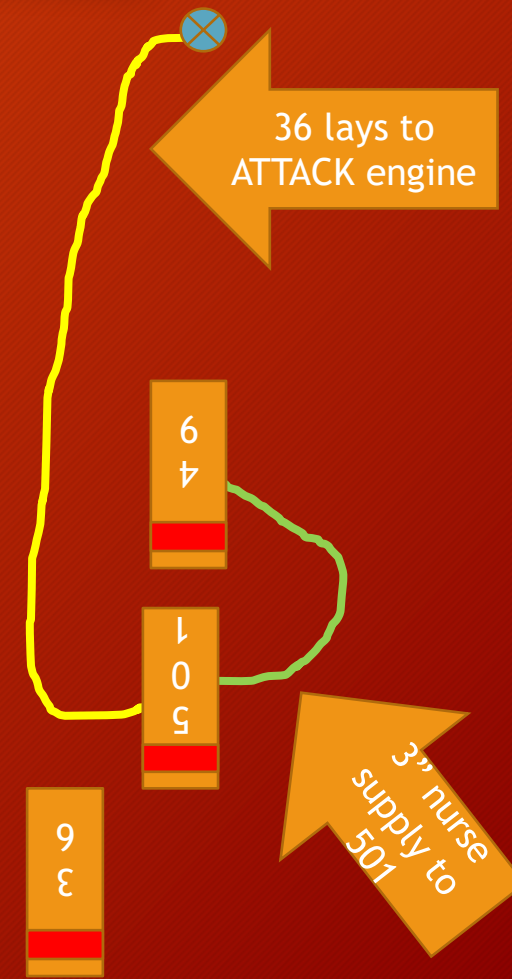
It is also possible that the initial arriving officer may call for the second engine to lay a supply line if the volume of fire is beyond the abilities of a simple engine nursing operation.

The supply line operation may be in the form of a forward, reverse, or split lay.

# Hydrant Supply - Forward Lay

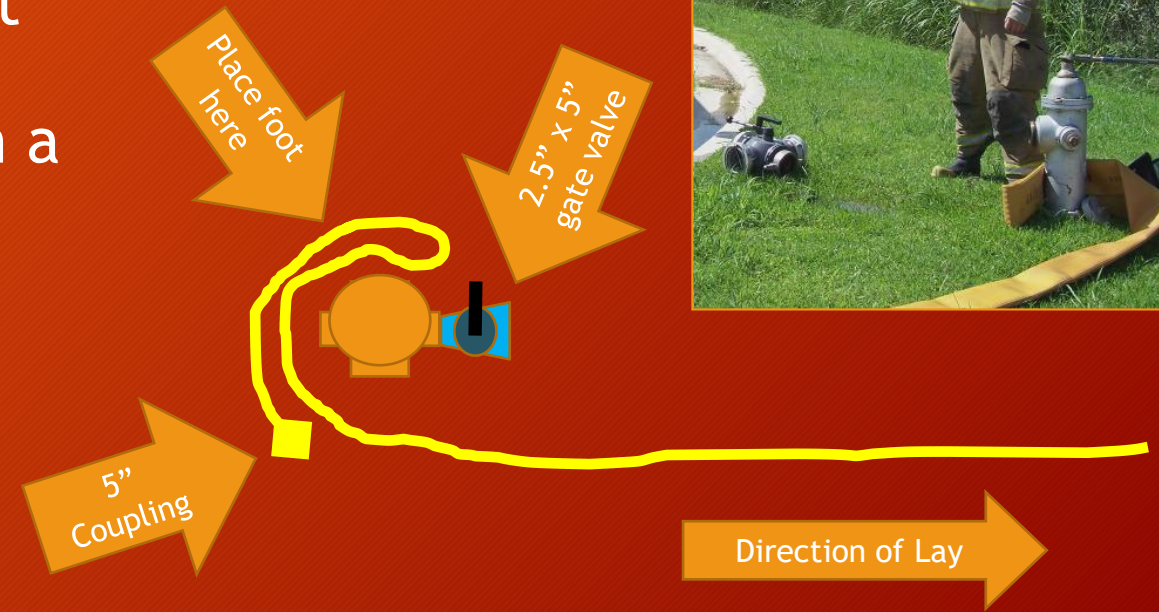
When setting at the hydrant for a forward lay, the following steps should be followed:

- The hydrant bag and 5" supply is deployed to the hydrant from the engine
- The 5" is set to the barrel of the hydrant in preparation for the lay
- The hydrant is checked for water
- The order is given to lay in while securing the 5" against the barrel of the hydrant
- After the first 100' is on the ground, the 5" is attached to the steamer outlet using the correct adapters for that hydrant (4" COA thread or 4.5" NST)
- The 2.5" x 5" gate valve is attached to the 2.5" outlet facing the incident (this allows the hydrant to be maximized if needed)



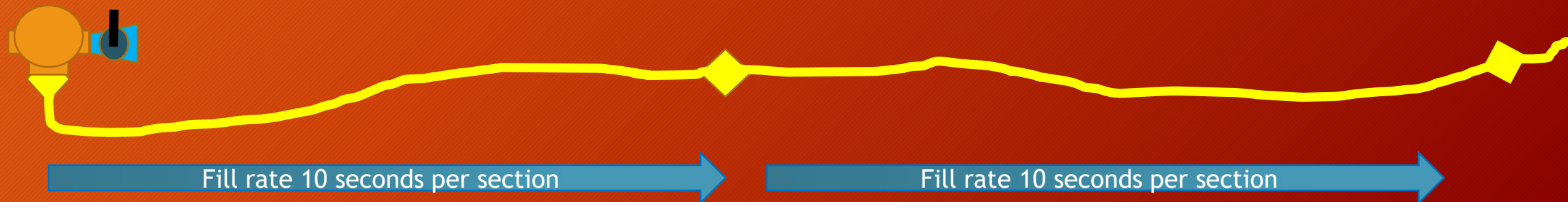
# Hydrant Supply - Hydrant “Wrap”

When anchoring the 5” to the hydrant for the forward lay, the firefighter should fold the hose back on itself in a bight and then hold the hose against the hydrant barrel with their foot. The coupling should be pointed toward the scene in a manner so that the coupling cannot strike the firefighter should the hose snag on the apparatus.



# Hydrant Supply - Forward Lay

The firefighter at the hydrant needs to be monitoring the radio and watching toward the scene for a signal to open the hydrant. Once received, the hydrant should be opened until the hose is filling at a rate of 100' every 10 seconds. Once this rate is achieved, stop opening the hydrant until the supply line stiffens up. This indicates that the water has reached the other end of the lay and pressure has equalized. At this point the firefighter can rapidly open the hydrant the remainder of the way without fear of water hammer.

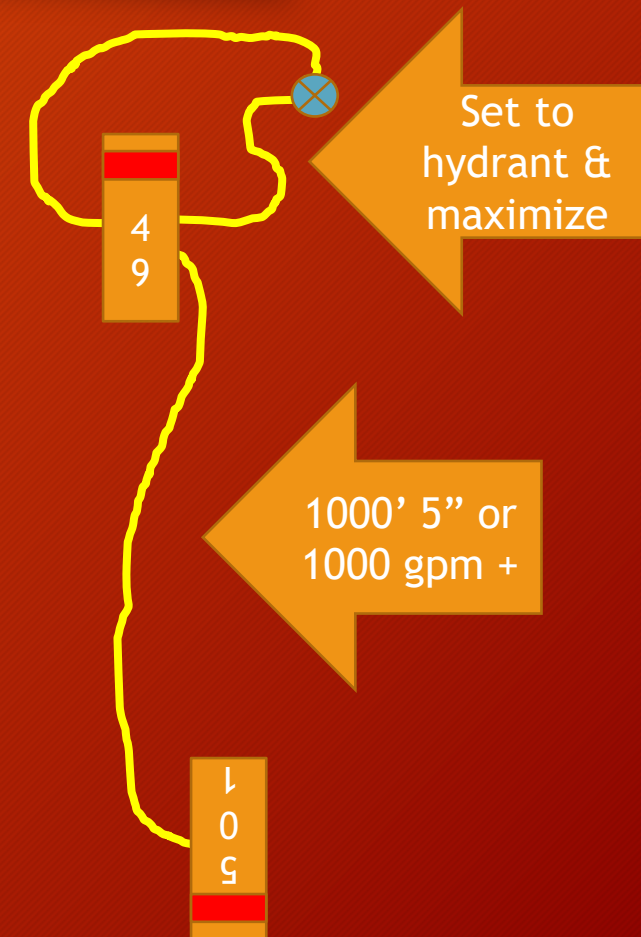




# Hydrant Supply - Reverse Lay

With a reverse lay, the lay starts at the scene and the apparatus drives to the hydrant. Often the crew will remain at the scene and the driver alone (or the driver and 1 firefighter) will go to the hydrant. Once at the hydrant the engine may tie in to the hydrant to relay or the supply may be directly connected to the hydrant, depending on the order given.

One rule of thumb as to whether to place the pump on the hydrant is the 1000/1000 rule. If the evolution involves 1000 feet of 5" and/or we are attempting to move 1000 gpm through the line - the pump should be set to the hydrant.



# Hydrant Supply - Reverse Lay

Once at the hydrant, the setup will be:

## Engine Not on Hydrant

- The hydrant bag and 5" supply is deployed to the hydrant from the engine
- The hydrant is checked for water
- The 5" is attached to the steamer outlet using the correct adapters for that hydrant (4" COA thread or 4.5" NST)
- The 2.5" x 5" gate valve is attached to the 2.5" outlet facing the incident (this allows the hydrant to be maximized if needed)

## Engine on Hydrant

- The hydrant bag and 5" pony section is deployed to the hydrant from the engine
- The laid 5" is set to the LDH discharge on the engine
- The hydrant is checked for water
- The 5" pony section is attached to the steamer outlet using the correct adapters for that hydrant (4" COA thread or 4.5" NST). The other end of the pony is connected to the engine intake
- The 2.5" x 5" gate valve is attached to the 2.5" outlet facing the incident
- The hydrant is opened and the engine begins relaying water to the scene
- A 100' section of 5" is pulled and connected from the 5" gate valve on the hydrant to the engine's other intake to allow for maximizing the hydrant if needed

# Hydrant Supply - Split Lay

A split lay is sometimes used to start a hoselay by an initially arriving engine with the intention of a later arriving engine to finish the lay to a hydrant.

The determination of whether the second engine pumps from the hydrant will depend on the direction given when the order for a split lay is given.

