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Floyd Fire Department
Floyd, Iowa

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
March 22, 2025
Summary Report

The Purpose

- The purpose of the seminar and drill was to review the basics of rural water supply operations and to practice water supply operations in a non-hydranted setting.
- The drill also allowed mutual aid companies to work together in a real-life training situation.

The Seminar

- The seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Floyd fire station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from Floyd County and the surrounding area.

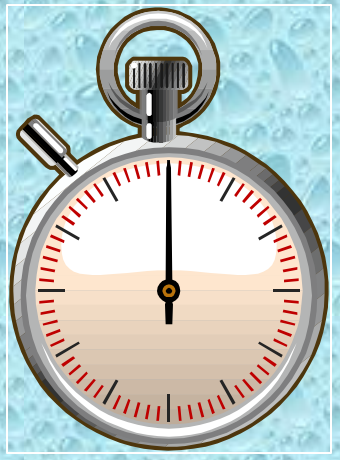
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on March 22nd in the Town of Rudd.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water supply delivery, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.
- *ISO now uses computer modeling to predict tanker shuttle flow capabilities.*

The Floyd 2-hr drill included a planned transition to a relay pumping operation to replace dump tank operations during the 2nd half of the event.

The ISO Test

- The ISO 2-hour Water Supply Delivery Test has three critical time segments:
  - 0:00 to 5:00 minutes
  - 5:01 to 15:00 minutes
  - 15:01 to 120:00 minutes



ISO Test *0:00 to 5:00 Minutes*

- A drill location is selected and the units due to respond on the first-alarm assignment are dispatched.
- Time starts when the first engine arrives on the scene and comes to a complete stop.
- There is no requirement to flow water during the first 5 minutes, but the crew must be prepared to flow water once the 5-minute mark is reached.

ISO Test *5:01 to 15:00 minutes*

- At the 5-minute mark, a flow of at least 250 gpm must be started - and it must be sustained.
- During the next 10-minutes, crews can work to further develop their water supply and increase their flow, however…
- At the 15-minute mark (5+10), whatever amount of water is flowing at that time must be maintained for the remainder of the 2-hour test.

ISO Test *15:01 to 120:00 minutes*

- Once the 15-minute mark has been reached, the remainder of the 2-hour test is really just about ***sustaining*** the flow.
- The ISO test includes the simulation of automatic mutual aid response and allows additional water supply units to arrive and assist in the delivery process as would happen on a real incident.
- The real advantage of the ISO test is that it gives a fire department the chance to see where improvements can be made in their water supply delivery process.

It is one thing to say that your fire department can deliver 500 gpm for two hours – it is another thing to prove it in a real-life drill scenario!

Water Supply Drill Participants

Participants				
Department	**Unit**	**Pump Size**	**Tank Size**	**Dump Tank**
Floyd	Ladder 891	1500 gpm	400 gal	NA
Floyd	Tanker 862	1250 gpm	3500 gal	NA
Floyd	Engine 851	1500 gpm	500 gal	2000 gal
Alta Vista	Tanker 19-731	100 gpm	3000 gal	2000 gal
Nora Springs	Engine 451	1500 gpm	1500 gal	NA
Nora Springs	Tanker 464	NA	2500 gal	2500 gal
Dougherty	Tanker 13-16	NA	3500 gal	NA
Charles City	Engine 252	1000 gpm	1500 gal	NA
Osage	Tanker 66-491	1000 gpm	3000 gal	3000 gal
Colwell	Engine 951	1500 gpm	1500 gal	2000 gal
Colwell	Tanker 961	350 gpm	2000 gal	2000 gal
Nashua	Tanker 19-422	500 gpm	3000 gal	NA
New Hampton	Tanker 332	500 gpm	2000 gal	2000 gal
Rudd	Tanker 652	NA	3000 gal	NA

- *The participants for the drill were from several different fire departments in the Floyd County region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Floyd area.*

The Drill Begins

The drill started with crews executing a rural hitch operation using a 5” x (3) 2-1/2” three-way Siamese. Colwell Engine 951 laid out a 650-ft supply line with that 3-way appliance on the end in preparation for the first tanker to arrive.

Rural Hitch Operations

Floyd Tanker 862 (1250gpm/3500 gal) was the first-arriving tanker and supplied the rural hitch using a section of 2-1/2” hose. Water flow was started at 250 gpm at the attack pumper (Colwell Engine 951).

Rural Hitch Operations

Osage Tanker 66-491 (1000 gpm/3000 gal) and Charles City Engine 252 arrived and supplied the 3-way valve once the Floyd tanker was empty. The rural hitch was supplied for the first 37-minutes of the drill.

Dump Site Operations

As additional tankers arrive, crews began to “drop” off “stuff” in preparation for a transition to a dump tank operation. Meanwhile, the tankers support the rural hitch.

Dump Site Operations

Around the 33-minute mark, the first load of water is dumped into the dump tanks and work begins to transition to a drafting operation.

Dump Site Operations

By the 37-minute mark a 2-dump tank, 500 gpm operation is under way and the rural hitch is no longer used to supply the attack pumper.

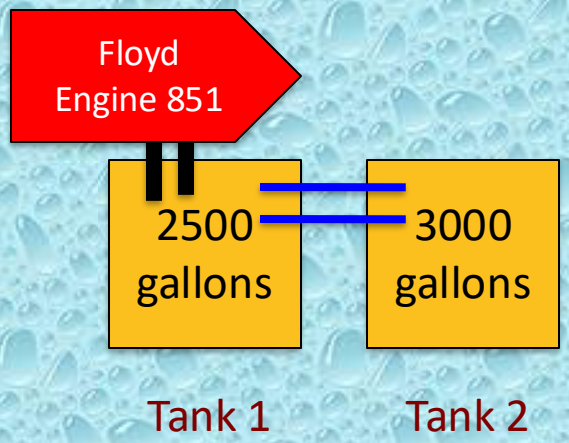
Dump Site Operations

At the 50-minute mark flow is moved to 1000 gpm where it remained until the transition to a relay pumping operation got up and running.

Dump Site Operations

Colwell Engine 951 (1500 gpm) operated as the attack pumper for the entire drill and never ran out of water.

Dump Site Layout



Suction Hose

Jet Siphon

The Fill Sites

- For this drill – one fill site was used – a boat launch area on Rudd Lake.
- The fill site provided about a 1.2-mile round trip for the units hauling water.
- The lake had ample water volume to support the drill, and access was not a problem.
- A 1500 gpm pumper was used at the fill site to load tankers.

Lake Fill Site

Nora Springs Engine 451 (1500 gpm) drafted at the boat launch using twin, 6-inch suction lines to help support the 1000 gpm loading station.

Lake Fill Site

The crews built out a loading station that allowed two tankers to be hooked up at once; but following the best practice of only loading one at a time.

Lake Fill Site

The fill site ran very efficiently and loading crews worked hard to get the rigs filled and on the way back to the dump site.

Transition to Relay Pumping

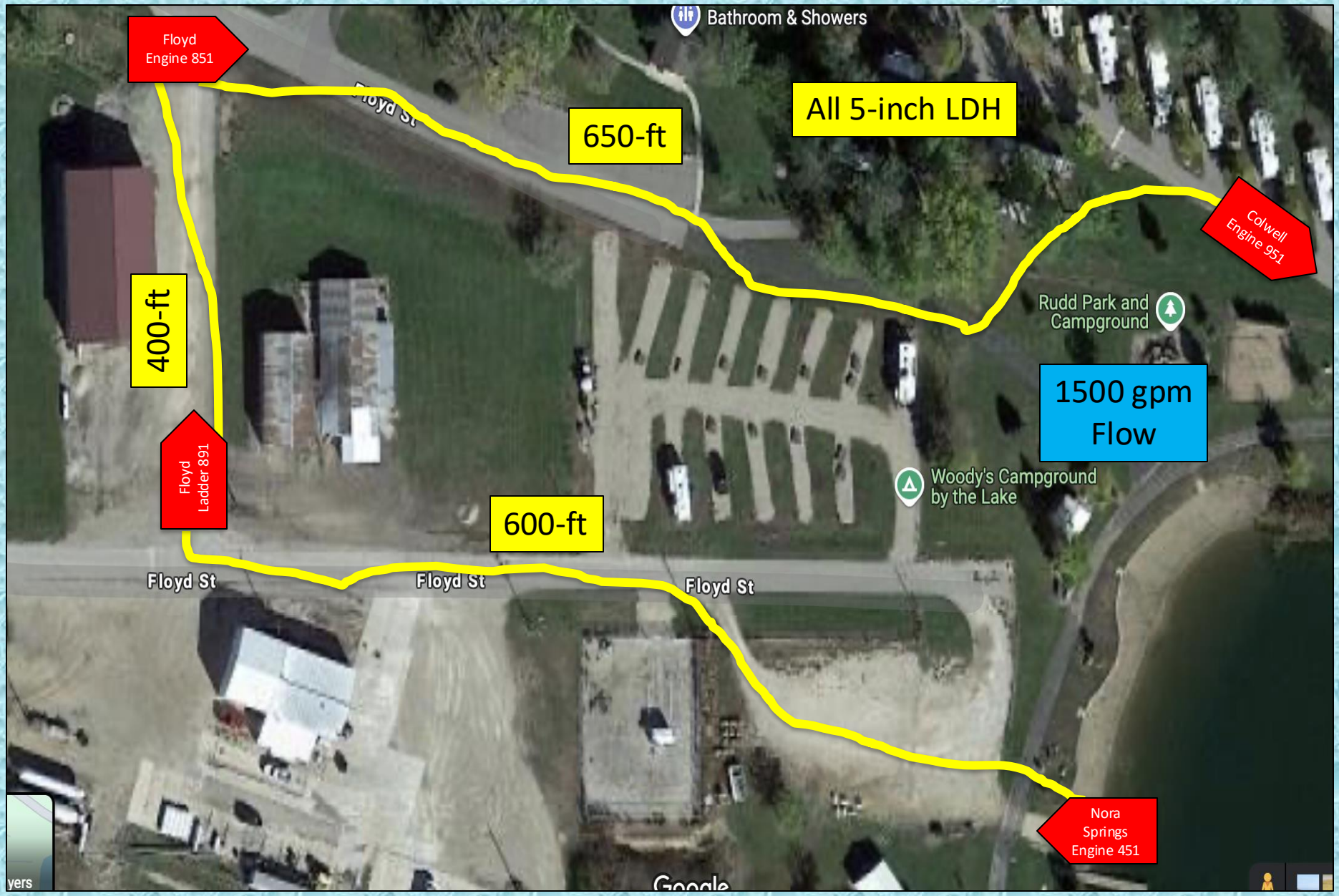
Part of the drill's plan was to replace the dump tank operation with a relay pumping operation. The goal was to lay 5-inch LDH from the fill site to the dump site and place a relay pumper somewhere in between. The 5-inch hose was laid while the tanker shuttle was still in progress so that water flow was never stopped at the attack pumper.

Transition to Relay Pumping

Floyd Ladder 891 (1500 gpm) was used as the relay pumper between the dump site and fill site.

Transition to Relay Pumping

A TFT Oasis valve was used as a relay valve and Ladder 891 provided the “boost” in pressure. (The kink was removed in the hose). A total of 1650-ft of 5-inch LDH was used in the relay to support a 1500 gpm flow.


Floyd
Engine 851
Bathroom & Showers
All 5-inch LDH
650-ft
Colwell
Engine 951
Rudd Park and
Campground
400-ft
1500 gpm
Flow
Floyd
Ladder 891
Woody's Campground
by the Lake
600-ft
Floyd St
Floyd St
Floyd St
Nora
Springs
Engine 451
Google

The Results

- The drill was stopped at the 2-hour mark.
- Water flow was interrupted a couple of times but not at the attack pumper.
- During he rural hitch part of the drill a 500 gpm flow was maintained using tankers and engines simply pumping off water.
- A flow of 1000 gpm was maintained during the dump tank operation.
- A flow of 1500 gpm was maintained during the relay pumping operation.

The Lessons Learned

- At this drill, crews chose to use a rural hitch operation to get things started.
- Using the rural hitch gave the crews time to get a dump tank set-up without the added pressure of having to draft and flow water right away.
- Once the two dump tanks were up and running the operation ran flawlessly.

The Lessons Learned

- The goal of the drill was to eventually replace the dump tank operation with a relay pumping operation.
- The relay pumping operation was executed without a problem and a more reliable water supply was developed for the attack pumper.
- A flow of 1500 gpm was sustained using the relay pumping and 5-inch LDH. This was a very realistic scenario for the Rudd FD given the proximity of the lake to the downtown area.

The Lessons Learned

- A tanker fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tankers is going to reduce the efficiency of the tanker shuttle.
- At this drill, there was some variance in how the tankers loaded – meaning the fill connection. Crews worked through those variances; but common fittings would have produced a higher output.

The Lessons Learned

- Jet siphons, suction hose, and dump tanks are needed at most every dump tank operation – therefore, it is wise to carry those items on every tanker – as well as adaptors.

Drill Videos

Be sure to watch videos from the drill on the GotBigWater YouTube Channel.

Summary

- The drill was a success. For the new folks, they got to see how dump tank operations work.
- For the older, experienced folks, it was a chance to practice their “craft.”
- The success of the drill showed the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Many thanks to the Floyd Fire Department for hosting the seminar.

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For more information contact us at
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