

- Message From Jim Mimplitz
- Navionics And Richards Electric Motor Company Team Up To Offer "Total Electrical Package" To Rural Water Districts

# NAVIONICS UPDATE

## Serving The Rural Water And Wastewater Industries With Customer-Oriented Wireless Control and Telemetry Systems

1998 was a year marked by close collaboration between Navionics, the Rural Water Districts, and the Engineers -- And I am pleased to bring you the latest news describing the advances in the state of the art of water control and vigilance which has resulted from this teamwork.



**Dial-Up Telemetry And Control.** In response to a request by Mr. Steve Fletcher (Washington County Water Company), Mr. Greg Bates (Jersey County Rural Water Company), Mr. Dean Heneghan, and Mr. Wally Cox (Heneghan & Associates Engineering), modem dial-up monitoring and control capability was added to the WiSTAR95™ graphical interface. This exciting new capability, which leverages the dial-up networking functionality already contained in Windows95/98™, enables system personnel to dial into the Telemetry C<sup>3</sup> (Communication, Command, and Control) Unit from a remote computer or laptop with access to a phone jack.

This new capability has been successfully field-tested and delivered to the following Illinois Water Districts: Washington County Water Company, Jersey County Rural Water Company, Raccoon Water Company (Centralia), Dallas Rural Water District (Ferris), Clinton County East PWD, Walnut Hill PWD, Carlyle-SW PWD, and Hoffman Rural Water District... And new installations are currently underway at Bond-Madison Water Company (Pocahontas) and Northeast Water Company (Mt. Vernon).

In addition to furnishing operators with the ability to monitor their systems from far-away remote locations, this new feature also provides the Water Districts with an efficient method of sharing telemetry history data with their Engineers and System Integrators. For example, Klingner & Associates Engineers (Quincy, IL), Richards Electric Motor Company (Quincy, IL), and Mr. Dana Gnann (Dallas Rural Water District) use the dial-up software to share history data detailing the performance of the well-pumps, water towers, and distribution system. This seamless data link between Dallas, Richards, and Klingner has enabled all players involved to work together more closely and efficiently.

Additionally, during the month of March, installation of the dial-up capability is planned for the Jerseyville and Centralia Offices of Heneghan & Associates, thereby providing them with data links to all 11 of their WiSTAR™ telemetry-equipped clients.

**Enhanced Pager Alarm Notifications.** In response to a request by Mr. Jim Green (Consolidated Water Service - Centralia, IL), the pager-notification feature of the WiSTAR95™ graphical interface was greatly improved with several cost-saving features. The new pager-notification functions utilize a standard modem to send coded messages directly to one or more numeric pagers. Using a lookup table, the operator is able to decode the page and therefore determine the exact location and nature of the alarm. Furthermore, this feature reflects Navionics' steadfast commitment to using standard PC-based components whenever possible.

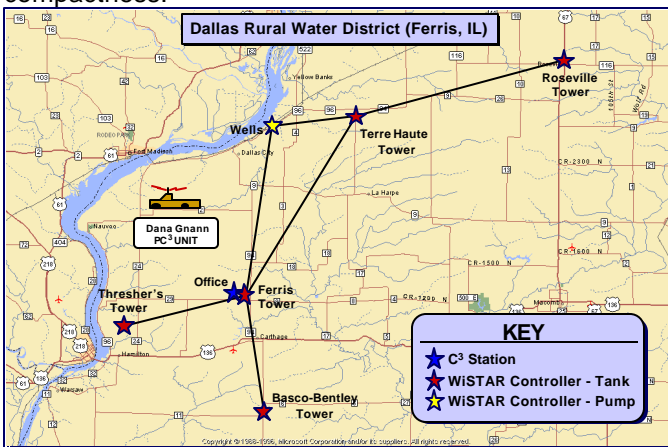
**Our Commitment To You.** In the upcoming year, I hope to have a chance to visit your system, see your challenges, and listen to your ideas. In this way, we at Navionics can succeed in our striving effort to realize your vision of what a Wireless Control and Telemetry System can and should be.

Jim Mimplitz  
President, Navionics Research, Inc.

## Navionics and Richards Electric Motor Company Team Up To Bring "Total Electrical Package" To Dallas Rural Water District

In the Fall of 1998, Navionics and Richards Electric Motor Company (Quincy, IL) completed their first joint venture, bringing state-of-the-art wireless control and telemetry to Dallas Rural Water District (Ferris, IL). Navionics is proud to be working alongside Richards, a venerated leader in the rural water and wastewater industry with considerable expertise in pump motors and drives, control panel construction, system integration, and installation.

Along with an upgrade to several Water Towers, the job featured the construction of a new Well-Field Pumping and Treatment Plant with an integrated WiSTAR™ Control System supervising all of the pumps and chemical feeders. Using a high degree of Programmable Control Logic rather than hard-wired relay racks, the plant's resultant electrical design was a model of simplicity and compactness.



### Pre-Job Radio Simulation Provides Low-Risk Communication Sub-System Design.

Dallas Rural Water, which features a Well-Field below the bluffs of the Mississippi River feeding several Water Towers, covers over 1200 square miles of territory. Navionics' wireless data link design provided solid communications between the sites "right out of the box". The proper selection of frequency-band, transmitter power levels, and antenna gains was achieved through a pre-job radio propagation simulation which took into account a terrain model imported from digitized US Geological Survey data.

**Expandable I/O.** The RTU/PLC at the Well-Field Plant interfaced 25 points of I/O (Input/Output), and exercised all the I/O capabilities of the WiSTAR™ System (Discrete hputs, Relay Outputs, Analog Inputs, Analog Outputs, and Totalizer Inputs). As an example of the flexibility inherent in WiSTAR™ Networked Control Systems, Dallas Rural Water personnel may select either of 2 water towers as the controlling tower, a technique

that was first pioneered at Washington County Water Company's Nashville Pump Station. This pre-programmed flexibility enables the system to run on automatic-mode when the primary control tower is down for painting or repairs. Additionally, the customer was provided with an automatic failover mode at the Plant. This feature causes operation to automatically revert to the operator's selection of pressure or timer controls in the case of either a communication failure or transducer failure at the controlling water tower.

**Field-Programmable I/O.** Because the new Control and Telemetry System at Dallas Rural Water was added during other construction, it was expected that unforeseen issues may arise during Startup. Because the WiSTAR™ System is a Field-Programmable Wireless Controller, these issues were not a problem. In fact, several custom additions were made on-site, usually within a few minutes. For example, it was observed that the Well Pumps would often run continuously for periods in excess of 12 hours. Therefore, in response to Dallas Rural Water Manager Dana Gann's request, custom logic was added to rotate the pumps automatically after 8 hours of runtime, thereby providing a more even degree of exercise for each well.



Dallas Rural Water Manager Dana Gann – Viewing The Levels In The Remote Water Towers With The Palmtop Interface

### Need More Information?

Give us a call. Working together, we can configure a Navionics WiSTAR™ System to solve your Water or Wastewater System's Control and Telemetry needs.

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