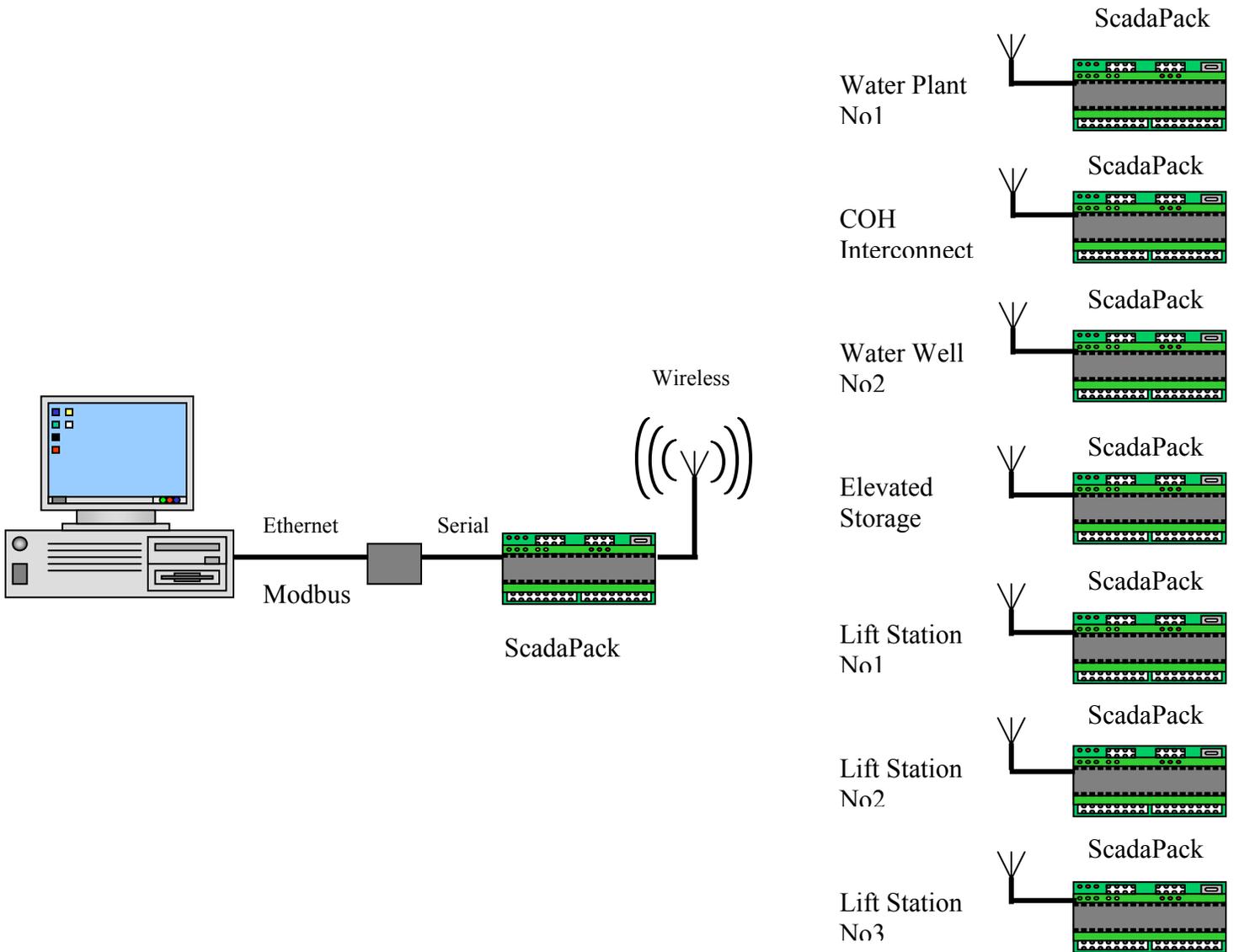


Municipal SCADA System

This software provides functionality to monitor the water system via Scadapack RTUs, have ability to manage the process, checking for alarm conditions, ability to view real time data and archived data on the Trending screen, printing various reports. The software shall be developed and configured using Parijat SCADA development system which is Microsoft VB6 based non-proprietary system.



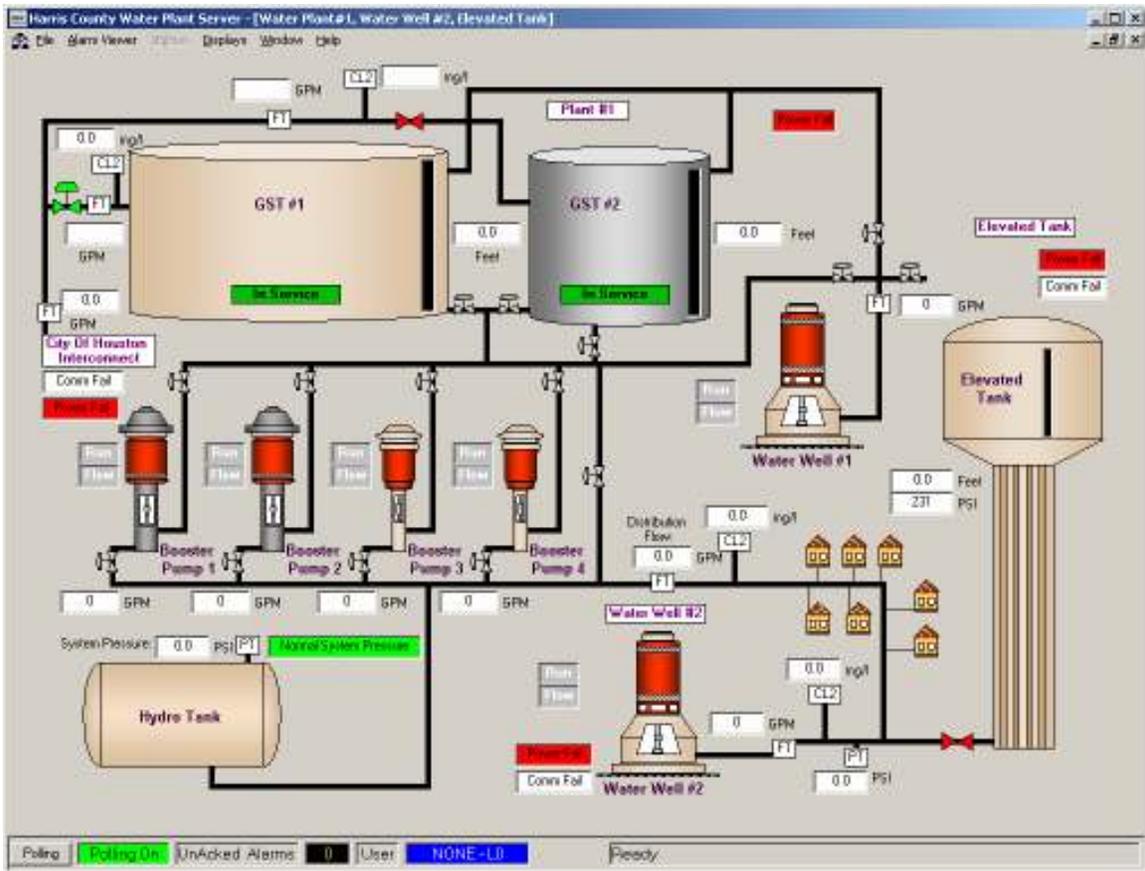
SYSTEM ARCHITECTURE

The system includes a stand alone PC with Ethernet communication card, which will be connected to the SCADAPACK Ethernet gateway. The Ethernet gateway will be connected to ScadaPack controller with serial connection. The Scadapack controller is attached to antenna which will transmit and receive data to/from all 7 Scadapack non-intelligent controllers.

GRAPHIC DISPLAYS

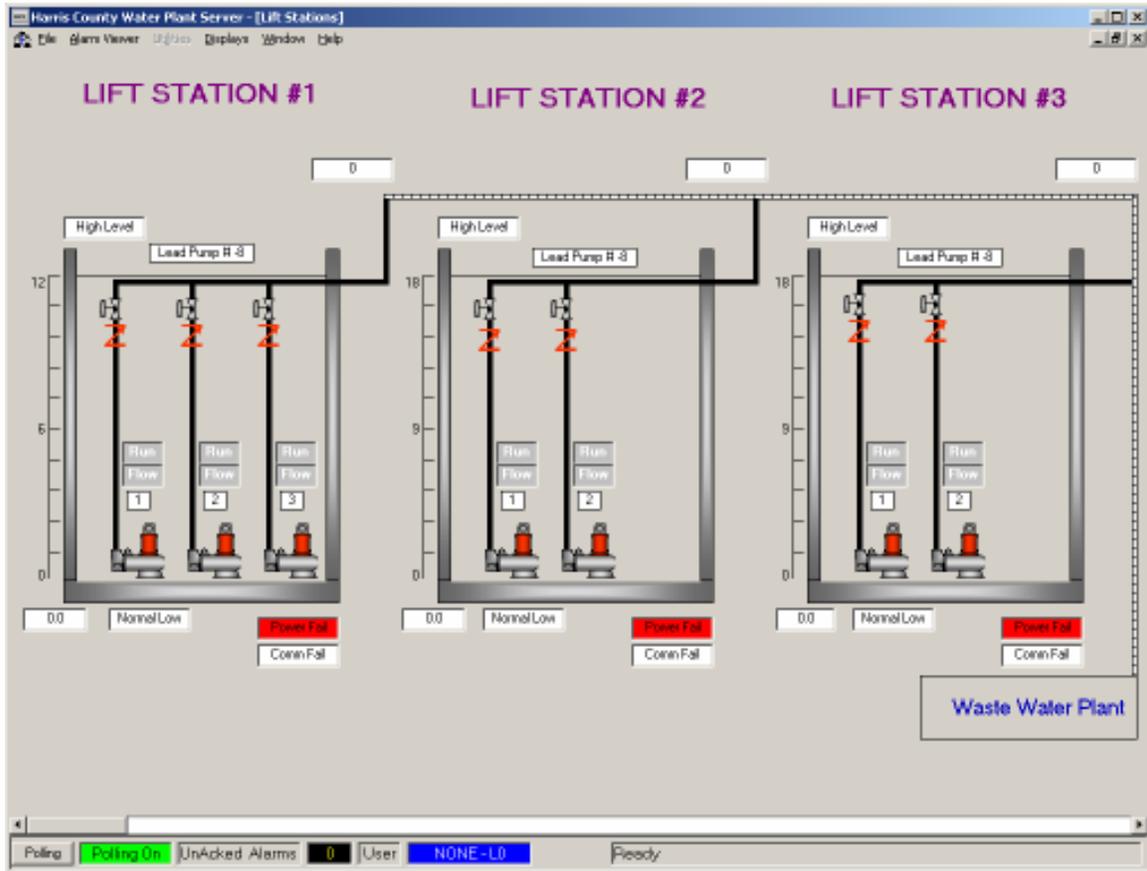
Water Plan 1 and Water Plant 2

This display provide overall picture of clean water system which includes Ground Storage Tanks, Booster Pumps, Water Well #1, Water Well #2, Hydro Pressure Tank, Elevated Tank, Various Valves. Shown labels represent actual values for System Pressure, Flow Rates, Chlorine Values, Levels, and bit statuses for variety of alarm conditions.



Lift Station Plan 1 and Water Plant 2

This display provide overall picture of Lift Stations water system which includes Pumps, Check Valves, Ground Storage Tanks, Booster Pumps, Water Well #1, Water Well #2, Hydro Pressure Tank, Elevated Tank, Various Valves. Shown labels represent actual values for System Pressure, Flow Rates, Chlorine Values, Levels, and bit statuses for variety of alarm conditions.



Lift Station Plan 1 and Water Plant 2

Communication Display provides you with communication information for every PLC. Also, it provides you some details for every RTU such as Clock time, Parameters, Comm Diagnostics.

The screenshot shows the 'Harris County Water Plant Server - [Communication Map]' interface. It features a grid of seven panels, each representing a different PLC or RTU. Each panel displays 'CPU Status' and various metrics: Heartbeat, Vols, Temperature, Status, and DIF Scan. The 'Water Plant #1' panel shows a red 'Communication Failed' message. The other panels show 'Scanning' status. A 'Select PLC...' dialog box is open, displaying 'Clock' information for both RTU and PLC, including Date and Time. The status bar at the bottom indicates 'Polling On', 'UnAcked Alarms: 0', 'User: admin-L3', and 'Ready'.

| PLC/RTU Name | Heartbeat | Vols | Temperature | Status | DIF Scan |
|-----------------------|-----------|------|-------------|----------------------|----------|
| Water Plant #1 | 0 | 0 | 0 | Communication Failed | |
| Houston Interconnect | 0 | 0 | 0 | 0 | Scanning |
| Lift Station #1 | 0 | 0 | 0 | 0 | Scanning |
| Water Well #2 | 0 | 0 | 0 | 0 | Scanning |
| Lift Station #2 | 0 | 0 | 0 | 0 | Scanning |
| Elevated Storage Tank | 0 | 0 | 0 | 0 | Scanning |
| Lift Station #3 | 0 | 0 | 0 | 0 | Scanning |

Select PLC...

Clock

PLC Date: 00/00/00 Read RTU Clock
PLC Time: 00:00:00

PC Date: 11/30/00 Set PLC Clock
PC Time: 10:28:39

Polling: **Polling On** | UnAcked Alarms: **0** | User: **admin-L3** | Ready

Equipment Details

This screen provide more details on Pumps and valves such as Run times, Set points, Alarm conditions, Run status, and ability to control equipment.

Equipment Details

Booster Pump 2

Run Times

Total Run Time:

Yesterday Run Time:

HDA



Alarm Condition

Flow Fail:

Inputs

Flow Fail Input:

Out Of Service:

Override Enforce:

Pump On/Off:

Set Points

ON:

OFF:

Communication Information Display

This display shows current comm. settings and status.

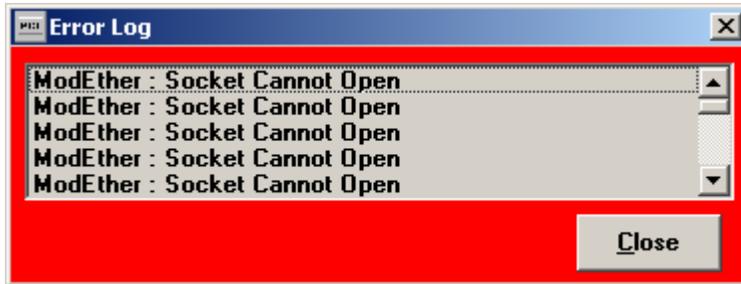
MODBUS TCP/IP [ModEther]

| | | | | |
|-----------------|-----------------------------------|-----------|--|---|
| Device | <input type="text" value="1"/> | IPAddr | <input type="text" value="209.83.249.52"/> | <input type="button" value="ONLINE"/> |
| Scan | <input type="text" value="6"/> | IP Port | <input type="text" value="502"/> | <input type="button" value="On Line"/> |
| Function | <input type="text" value="0"/> | Protocol | <input type="text" value="RTU"/> | <input type="button" value="Off Line"/> |
| TransactionTime | <input type="text" value="0"/> | Err Count | <input type="text" value="3306"/> | Busy <input checked="" type="radio"/> |
| Scan Interval | <input type="text" value="70"/> | | | |
| TimeOut | <input type="text" value="1000"/> | | | |

Result

Error Messenger

This window display errors that occurred during the process. For example: Communication Error.



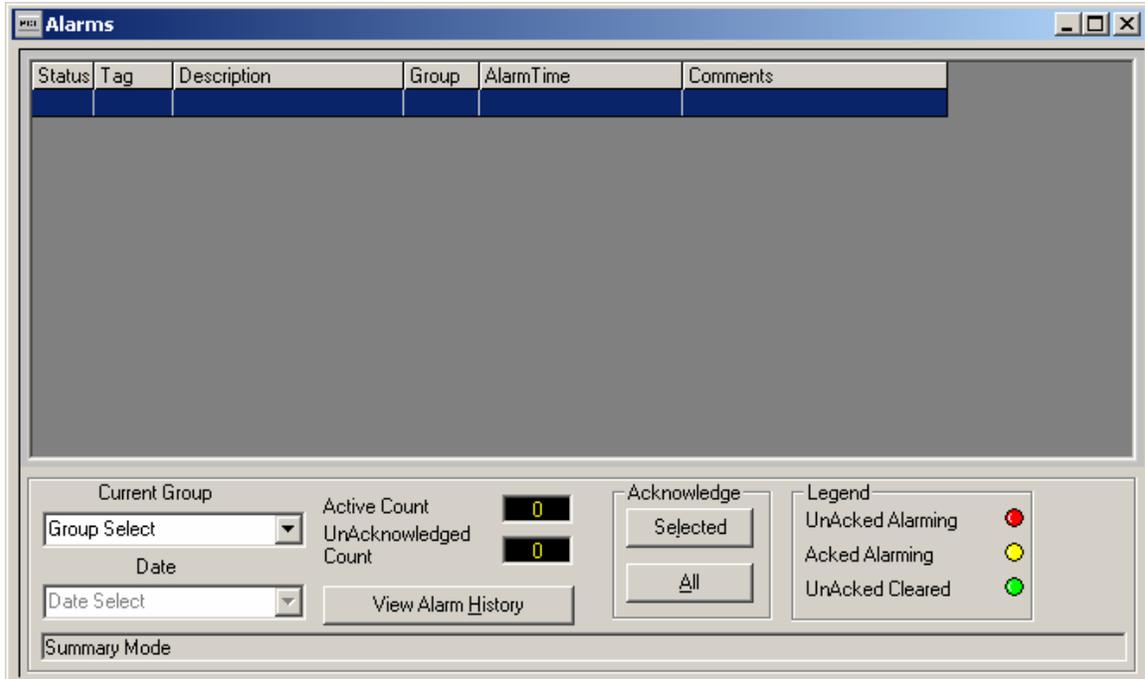
Report Configuration

This screen provides you select data you want to put on report. You can select different locations and different period of time to retrieve data.



Alarm Viwer

This screen will show all alarm conditions which are active or happened before. You can acknowledge alarms.



Trending

Trending screen will show real time or historic data for selected points. You can specify specific points from the list to monitor, and assign different colors to the points. You can resize scaling.

