

## PROJECT PROFILE



Franzen Reservoir  
Dam Safety Monitoring  
System Improvements  
Turner, Oregon

**Client:**

*City of Salem, Oregon*

The project involved the planning, design, and implementation of improvements to the City of Salem's existing dam safety monitoring program for Franzen Reservoir in Turner, Oregon.

The objective of the improvements was to develop and implement a system for detecting a developing potentially unsafe condition in the embankment. The City also desired to reduce the labor effort involved in collecting and evaluating the dam safety monitoring data. The improvements included installation of embankment piezometers, water level sensors, seepage collection weirs outfitted with electronic sensors and weather station instrumentation. Real time water quality data

is also collected and provided to off site personnel for use in operating the water supply reservoir cells. All instrument data is collected using an automated data acquisition system (ADAS) consisting of Measurement Control Units (MCU) located at various locations around the project.

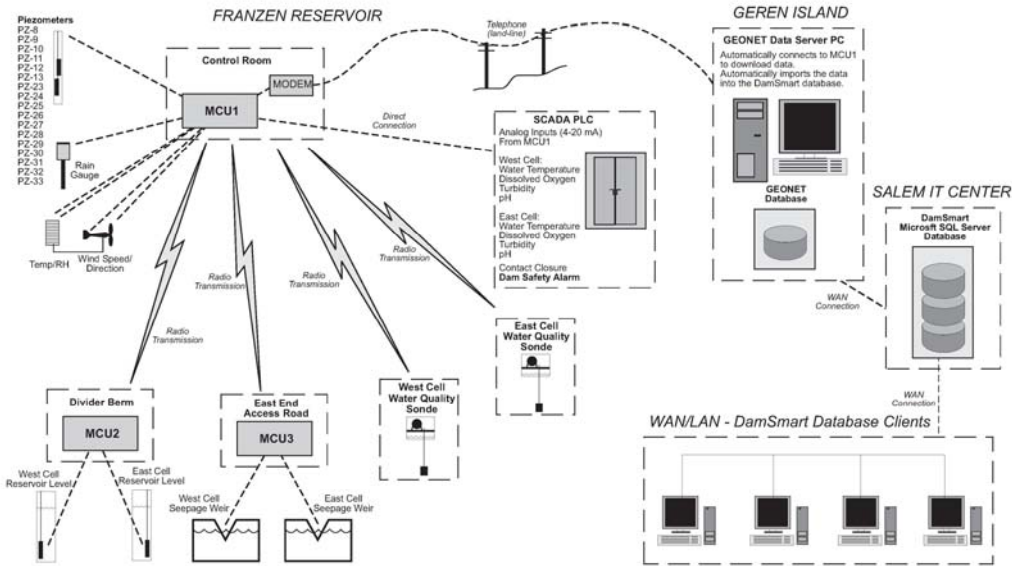
The MCU's are interconnected via radio telemetry and are configured to collect and compare readings with predetermined alarm threshold levels. Notification to operations personnel of a potentially unsafe condition is provided through an interface with the project's SCADA system.



A Microsoft @SQL Server database was configured to assist dam safety personnel in reviewing the recorded data for historical trends. Data collection is accomplished automatically from a remote workstation PC that is connected to the City's wide area computer network. The data can then be reviewed from any authorized PC that is connected to the network.

## GETTING DATA TO THE DESKTOP...

### System Connectivity



### Enter The Dates

### Define The Instruments

The screenshot shows the 'FRANZEN - [Instrument ID Definitions]' window. The 'Instrument ID Definitions' section is active, showing details for a '15-inch Palmer-Bowlius Underdrain Flume'. The 'Type' is 'FLUME' and the 'ID' is 'UCF1'. Below this is a table with columns for 'Code', 'Name', 'Units', 'Minimum', and 'Maximum'.

Code	Name	Units	Minimum	Maximum
R1	Stage	inches		
R2	Flume Flow	gpm	0	700

Buttons at the bottom include 'Help', 'Next ID', 'Previous ID', 'Save', 'Add', and 'Close'.

The screenshot shows the 'FRANZEN - [Time Series Plot Definitions]' window. The 'Time Series Plot Definitions' section is active, showing details for a plot titled 'Underdrain Flume Flow and Reservoir Level'. The 'Plot ID' is 'FLUMERES'. The 'Plot Title' is 'Underdrain Flume Flow and Reservoir Level'. The 'Left Y Axis' is 'Monitoring' and the 'Right Y Axis' is 'Plot Date Ranges'. The 'Specify Data and X Axis Date Ranges' section shows the following data:

Axis	Start Date	Time	End Date	Time
Data	09/25/01	00:00:00	12/28/01	00:00:00
X Axis	09/25/01	00:00:00	12/28/01	00:00:00

Buttons on the right include 'New', 'Save', 'Save As', 'Cancel', 'Delete', 'Run', 'Close', 'Help', and 'Series: (36 Max.)' with a value of '2'.

### Present The Data

