

## **APPENDIX A – SCADA SYSTEM CURRENT AND FUTURE GOALS**

Included below is a short summary of the current and future goals and initiatives for the Wastewater SCADA system as it relates to the Wastewater sewer operations.

The intent of this Appendix is provide the successful Proponent the necessary background to ensure the recommended communications technology not only fulfills current requirements, but will also address future needs.

### **Current SCADA System Operation**

The current SCADA arrangement has the majority of the installations connected via the Public Switch Telephone Network (PSTN), and is significantly outdated for the City of Winnipeg's current and future needs. Currently each site connected via PSTN is dialed into on a ten minute recurring basis.

All installations transfer the data being monitored to the SCADA Control Centre at 360 McPhillips Street. Collections system operators view this data on work station computers, and provide instructions to collections field staff as required based on the data received.

For the PSTN connected installations, no remote operation of specific pumps, valves or gates is allowed. In each case where pumps, valves and/or gates must activated/de-activated, a crew of field staff must attend to the specific installation to complete this work.

Should PSTN communication fail in these locations no other redundant communication means are immediately available. Temporarily wireless cellular connections can be deployed to these installations by field staff, however during the time period where it is discovered that PSTN communication is not available and wireless connections are deployed operating data from the installation is temporarily unavailable.

Select sites have been upgraded to wireless cellular technology, with the previous PSTN connection remaining as a redundant connection. In these locations data is transferred for viewing in the central SCADA Control Centre approximately every 15 seconds.

### **Future SCADA System Operation Goals**

Listed below are the goals that the communication technology recommended must consider. It is desired that the communications technology recommended be "future-proofed" to allow for the future goals listed to occur seamlessly with little additional upgrades to the communications systems.

All primary goals are considered required as soon as possible, while all future goals have tentative dates in which they are expected to occur.

#### **Primary Goals**

1. To provide an upgraded communications technology which provides for real-time viewing of data received from each and every installation in the network. For Wastewater Collections operation data being received at an interval of 15 seconds or less is considered real-time data transfer.
2. To provide network redundancy to still allow data transfer when the primary communications technology is unavailable. This will be required for the majority of installations in the SCADA network. The awarded Consultant will contact the Contract Administrator to determine which installations do not require network redundancy.
3. To allow for secure data transfer from each installation to the SCADA Control Centre. This will be required for the majority of installations in the SCADA network. The awarded Consultant will contact the Contract Administrator to determine which installations do not require network redundancy.

## Future Goals

1. To provide complete remote operation of all pumps, valves, gates at each installation on the network from the SCADA Control Centre. Remote viewing of all data from the SCADA installations will be available from computers, tablets or other devices remote from the SCADA Control Centre, however no remote operation of components will be possible from these remote devices. Only the workstations within the SCADA Control Centre will allow for remote operation.

Means to ensure the implementation of remote control via the upgraded communications technology must be considered.

2. The SCADA Control Centre is expected to be re-located in the future to the North End Water Pollution Control Centre (NEWPCC), as part of the future upgrades to the plant. This work is largely dependent on the timing of the NEWPCC upgrade work. Similar workstation and staff layout is expected for the Control Centre at this location.

Considerations as to reducing the burden in reconnection of each of the installations to this new Control Centre location must be considered in recommendations of appropriate communications technologies.

3. A feasibility study is expected to be released in the future for the evaluation of implementing real time control (RTC) within the wastewater collections system. This study will document the planned phasing and testing of RTC logic arrangements for automated remote operation of select pumps, valves, gates, etc at wastewater installations.

It is integral that prior to the recommendations of the study being implemented that means to allow for remote control of all components via the recommended communications technologies be provided.

4. Both the primary and redundant back-up communications technology is desired to provide as close to real-time data transfer as possible.

Means in place to allow for these future communications upgrades must be considered.