

## **Eligibility Guidance: SCADA and Water Meters**

### **Clean Water Fund Program (CWFP) And Safe Drinking Water Loan Program (SDWLP)**

#### **SCADA**

This policy clarifies the eligibility of costs associated with supervisory control and data acquisition (SCADA) systems for funding through the CWFP or the SDWLP. This policy specifies that SCADA costs are eligible for CWFP and SDWLP funding either as part of a project or as a stand-alone project.

*If the applicant identifies SCADA work in the Intent to Apply (ITA) and Priority Evaluation and Ranking Form (PERF):*

- ▶ When a project description in the PERF includes SCADA work along with a larger construction project at a particular facility, allow costs for SCADA-related modifications or additions regardless of where the work needs to occur (it may need to take place at various facilities rather than just at the facility at which primary construction is taking place). For example: If a municipality is constructing an elevated storage tank for their drinking water system, SCADA work would be eligible at that particular facility and, if needed to integrate the project into the system appropriately, at perhaps a well and/or a water treatment plant.
- ▶ When funding a treatment works project or a drinking water system project for a facility that has an existing SCADA system that is used for more than one utility, allow SCADA costs related to keeping the municipality's wastewater, storm water, and/or drinking water utility facilities properly communicating with each other and maintaining or possibly upgrading whatever level of consistency the municipality had between the wastewater, storm water, and drinking water controls prior to the project.
- ▶ If a SCADA-only project is proposed for more than one utility, fund the project:
  - Through the CWFP if the majority of the costs are related to wastewater and/or storm water utility functions,
  - Through the SDWLP if the majority of the costs are related to drinking water system functions, or
  - Through either program if the costs of the project are 50/50.
- ▶ If a municipality chooses to contract with a hosted internet-based SCADA provider, allow costs for work done by the host company to set up equipment throughout the municipality's utility service area and to install necessary software. This type of work would not be eligible as a stand-alone project because the municipality would not own or maintain the system themselves.

*If SCADA work is not identified in the PERF:*

- ▶ When a project includes work that impacts data collection and system control needs, but SCADA is not mentioned in the project scope in the PERF at the time the project is scored, allow only SCADA costs necessary to integrate the project into an existing SCADA system and keep the utility functioning properly. The DNR construction management engineer (CME) and the DNR project manager should confer to determine whether the SCADA work is necessary for the project. The majority of water main and sanitary sewer installation or replacement projects would not be projects in which SCADA is eligible unless the SCADA is specifically identified in the PERF project scope.

*Notes:*

- ▶ In order for SCADA to be eligible as a stand-alone project, there must be some type of construction work included in the project (*e.g.*, installation of equipment, modification to a facility in order to fit SCADA equipment into the facility, mounting data transmitters at various locations throughout the system).
- ▶ SCADA work should be funded as non-core in an SDWLP project only if both of the following apply:
  - The work doesn't fit into the scope of a larger project the municipality intends to finance through the SDWLP in the same fiscal year; and
  - The SCADA costs are too low to make it feasible to fund the SCADA work as a stand-alone project.

Justification for Policy Decision

A SCADA system is an integral element in the control and operation of water systems and treatment works. The technology of these types of systems is advancing quickly, while, at the same time, water and wastewater utilities are under increasing pressure to prevent service disruption, control costs, prevent overflows during extreme storms, and provide regulators with detailed process information on ever-changing regulatory requirements. A SCADA system can help utilities perform better, more efficiently, more economically and reduce risks to the environment and public health. The benefits and importance of SCADA systems justify DNR's flexibility for funding SCADA systems whether the SCADA system work is part of a larger project or is a stand-alone project. Specifically:

- ▶ Upgrading or installing SCADA can have a significant cost, and as noted above, is an important part of keeping a system running properly. A municipality may want to install a SCADA system at a time when they don't have other construction projects scheduled. Funding SCADA only as part of a larger project does not allow municipalities the flexibility to tackle SCADA issues in the absence of other facility improvements.
- ▶ Since SCADA systems sometimes run and/or monitor more than one utility, and functionality of more than one utility could be impacted if there is a change to the SCADA system, it is important that DNR allow municipalities to include funding for SCADA activities to maintain the functionality of the overall SCADA system.
- ▶ Although DNR traditionally has not allowed, as eligible costs, items or activities that are not included in the project description in a SDWLP PERF, the DNR recognizes that it would be beneficial to allow SCADA equipment upgrades and activity costs not specifically included in the SDWLP PERF to ensure the entire project functions properly after construction. DNR notes that this would not apply to a brand new SCADA system where one was not previously installed.
- ▶ Funding SCADA equipment installation and startup costs paid by a municipality to an internet-hosted SCADA system provider could open up new opportunities for our economically disadvantaged and smaller municipalities to add some capacity to run their utilities more efficiently and effectively. Municipalities that feel they can't afford the significant upfront cost of purchasing a SCADA system but would benefit from a SCADA system may be able to subscribe to an internet-hosted SCADA system provider. With this SCADA option, the utility pays a monthly fee to the host company that provides SCADA equipment and data storage for the utility. Hosted solutions allow utilities to quickly implement quality SCADA systems supported by a team of experts while eliminating the need to install extensive infrastructure and add or maintain extra staff.

## Water Meters

The following guidance specifies when costs of replacement of customer water meters and related equipment and software, including conventional meters, Automatic Meter Readers (AMRs) and Advanced Metering Infrastructure (AMI), are eligible for funding in both the Safe Drinking Water Loan Program (SDWLP) and the Clean Water Fund Program (CWFP):

- ▶ A municipality may receive financial assistance for projects to replace customer water meters, including principal forgiveness funding, when the score for the project falls into the principal forgiveness fundable range on the Final Funding List.
- ▶ Meter replacement projects should generally be scored as stand-alone projects in the SDWLP with the exception of a project that includes upgrading individual meters along with upgrading SCADA or other communications or data collection devices for the water system.
- ▶ The municipality must own, operate, and maintain the meters.
- ▶ Continue current policy of funding water meters for a new water system as part of overall new system construction.
- ▶ Routine maintenance and replacement of individual customer meters would not be considered eligible for funding. Scheduled replacement would not be included in a loan, unless replacing the individual meters is part of a system-wide meter upgrade, or the applicant is installing meters in phases as they hook up the entire community to a SCADA or other communications or data collection system.

## Justification for Recommendation

Upgrading water meters can inform customer behaviors and provide tools to improve system management, system finance, water efficiency, and water management, and as such, should be eligible for SDWLP and CWFP funding. Specific benefits that can be achieved through allowing funding of projects to replace customer water meters include the following:

- ▶ Municipalities can achieve financial savings over a fairly short period of time after installation of AMRs or AMI.
- ▶ AMI can interface with other water and wastewater data systems, such as SCADA, which can help improve efficiency of utility operations and allow early recognition of potential problems in the system(s), including identifying water loss problems.
- ▶ With more frequent and more accurate data from new meters, municipalities may have improved planning capabilities for future needs identified through following changing data and trends.
- ▶ AMR and AMI systems provide detailed data on consumption patterns that utilities can use as a basis for designing water loss control programs, improving accuracy of billings, developing cost recovery pricing, and establishing conservation rates and inclining block rate structures.
- ▶ Municipalities may replace customer meters that have lead in them with new lead-free meters, improving the quality of the water being supplied to the water system customers.
- ▶ Patchwork replacement of individual meters on a regular schedule as they reach the end of their useful life would not achieve the overall benefits of upgrading meters throughout a system—improving water efficiency, hooking up to SCADA for monitoring water distribution, collecting data for reporting, etc.