



Smart Management for  
Small Water Systems

# Developing an Implementation Plan for Your Energy Management Projects



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# Energy Management Program - Basic Steps

- Step 1. Establish Organizational Commitment
- Step 2. Develop a Baseline of Energy Use
- Step 3. Evaluate the System and Collect Data
- Step 4. Identify Energy Efficiency Opportunities
- Step 5. Prioritize Opportunities for Implementation
- **Step 6. Develop an Implementation Plan**
- Step 7. Provide for Progress Tracking and Reporting

Source: NYSERDA



# Developing an Implementation Plan

“A goal without a plan is just a wish.”  
- Antoine de Saint-Exupéry



# Developing an Implementation Plan

- Step 1: Define your project objective(s) & target(s)
- Step 2: Identify the tasks necessary to meet your project objectives
- Step 3: Identify changes to your Standard Operating Procedures and to your Process Control
- Step 4: Determine project timeframe and resource allocation



# Step 1: Define Your Project Objective and Target

- Identifying your project objective is the first step in creating your implementation plan
- Identifying your project target will help you determine the success of your project implementation





# Potential Energy Objectives

- Reduce energy cost
- Reduce petroleum consumption
- Reduce peak energy demand
- Reduce greenhouse gas emissions
- Improve reliability
- Increase use of renewable fuels



# Factors to Consider in Setting Objectives and Targets

- Ability to control
- Ability to track / measure
- Cost to track / measure
- Progress reporting; and
- Linkages to your energy policy



## Example: Let there be light!

Facility XYZ has prioritized replacing their existing high-pressure sodium lights with LEDs.

- What are some possible objectives of this improvement?
- Using those objectives, what would some targets be?





## Step 2: Identify the Tasks Necessary to Meet Your Project Objective

- Tasks are the individual steps that it will take to implement your project
- These tasks can act as mini-goals or achievements as you work to complete your overall objective



## Step 3a: Identify Changes to Your Standard Operating Procedure

- With any change to your facility, there will be a change in your day-to-day operations (a.k.a. your standard operating procedure)
- Changes may affect:
  - Operator duties
  - Equipment maintenance
  - Treatment process
  - Emergency response



## Step 3b: Identify Changes to Your Process Control

- With any change to your facility, there will be a change in how you respond to unexpected problems
- Things to consider:
  - Does your facility use automation? If so, will it require reprogramming as a result of your improvement?
  - Are your operators sufficiently trained to address problems with any new equipment?



## Back to Our Example: When the Lights Go Out In the City



- How will changing the lights change how your facility regularly operates?
- How will changing the lights change how you respond to problems?



## Step 4: Determine Project Timeframe and Resource Allocation

- How long will it take for a task to be completed?
- Who is responsible for completing the task?
- How much time will that person spend working on the task?
- How much will it cost to implement the task?



## Back to Our Example: An Energy Improvement Plan for Replacing Those Lights

Let's look at the task of purchasing new LED lamps:

- **Staff** – Who is responsible for completing that task?
- **Timeline** – How long until the task is completed?
- **Estimated Time** – How many hours will the responsible staff member spend on the task?
- **Estimated Costs** – If the task requires equipment purchase, how much will it cost?

# Case Study: City of Hutchinson, KS

## Water and Wastewater Utilities

Tasks	Staff	Timeline	Estimated Time (Person Hours or FTEs)	Estimated Costs (e.g., equipment)
<b><i>Replace existing large capacity vertical turbine pump and motor at Well #21 with lower capacity submersible pu</i></b>				
<b>Task:</b> Develop project scope <b>Deliverable:</b> Document	WTC	By June 1, 2012	1 hour	
<b>Task:</b> Obtain approval from Public Works Director for project concept <b>Deliverable:</b> Document/Email	WTC Public Works	By June 8, 2012	2 hours	
<b>Task:</b> Issue RFP for equipment and installation <b>Deliverable:</b> Contractor Proposal	WTC	By June 18, 2012	3 hours	
<b>Task:</b> Review RFP response <b>Deliverable:</b> Document	WTC Public Works	By July 10, 2012	3 hours	
<b>Task:</b> Obtain approval from Public Works Director for project to proceed <b>Deliverable:</b> Document	WTC Public Works	By July 12, 2012	2 hours	
<b>Task:</b> Obtain PO Number <b>Deliverable:</b> Document	WTC Purchasing	By July 19, 2012	2 hours	
<b>Task:</b> Enlist contractor <b>Deliverable:</b> Signed contract with vendor	WTC Contractor	By July 29, 2012	2 hours	
<b>Task:</b> Install equipment <b>Deliverable:</b> Pump/motor removal and replacement followed by pump test and SCADA modifications	WTC Contractor	By October 1, 2012	72 hours	\$15,000 (estimated)



# Developing a Plan for Your Prioritized Project(s)

Now is the time for you to develop an implementation plan for your prioritized energy management project(s).



# Thank You!

And please let us know if you have any questions.

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