



## **WIND TURBINE FEASIBILITY STUDY**

### **Water Reclamation Plant Rochester, MN (2006)**

#### **Objective**

To study and determine the feasibility of installing a wind turbine generator at the City of Rochester's Water Reclamation Plant (WRP)

#### **Project Summary**

The City of Rochester is looking for ways to reduce its cost for power and use cleaner alternative energy sources, so they decided to investigate the idea of installing a wind turbine generator for the WRP on an adjacent landfill site. The city hired Integrated Technology Engineering (ITE) to study the feasibility of this project.

ITE analyzed at many factors affecting the project including:

- Cost of the project including equipment, installation (foundation, structure, connecting to existing distribution system), and ongoing maintenance.
- Available financing, incentives, and federal grant opportunities.
- Actual power output estimates based on available wind turbine sizes, historical common capacity factors, and a wind resource analysis performed by WindLogics
- Site permitting requirements and environmental impact of the area.

#### **Conclusion**

Based on the findings from ITE the City of Rochester decided not to proceed with the wind turbine installation at this time. The costs outweighed the benefits for this project, the major limiting factors were;

- Wind speed and availability at the site which would decrease the potential output of the turbine and
- Costs and limited funding availability to purchase a wind turbine, connect to existing distribution, and build a foundation on an existing landfill site.

Total payback for the project was estimated at 18 years which exceeded the city's expectations for investing in supplementary power.

The **City of Rochester** relied on **Integrated Technology** to study the feasibility of installing a wind turbine generator for supplementary power to the city's Water Reclamation Plant.

