

SECTION 8.0
USE AND CONSERVATION OF ENERGY

The proposed Eastern Expansion of the Rapp Road Landfill will allow the City of Albany to continue to dispose of municipal solid waste at the existing landfill site. This is a critical need for the City and the ANSWERS communities to allow uninterrupted solid waste removal and disposal services while alternatives are being researched and discussed through the Solid Waste Management Plan Update process.

The existing energy consumers associated with solid waste management in the City and ANSWERS communities include on-site waste management equipment and operations and off-site municipal solid waste collection services. Energy consumption is heaviest for the collection services as it primarily involves curb-side collection of wastes either by the City (for residences within the City) or private waste haulers (commercial inside and outside the City and residential outside the City). In terms of efficiency, the small city model provides the most efficient land use pattern for providing municipal services. High density in a relatively compact area reduces energy consumption for municipal solid waste collection. The close proximity of the landfill to the City reduces the hauling distance and is an added benefit for conserving energy.

Collection services outside the City are much less efficient due to the suburban and rural land use patterns. Additionally, individuals can bring their wastes to municipal transfer stations that send their wastes to the Rapp Road landfill. Efficiency in the private sector is presently dictated by profits. This is a strong force that creates the most efficient routes for collection and the shortest route for disposal at the end of the day. Therefore, a private hauler may begin the day south of Albany and end the day in north Colonie. They may decide to take their load to the Colonie landfill due to their location at the time.

The proposed expansion does not increase the landfill's daily limit of 1,050 tons nor does it increase the daily hours of operation or the number of days per year the facility is open. Therefore, the facility will not increase its energy consumption over current levels during operation. Additional energy will be consumed, primarily fossil fuels, for construction of the new cells and relocation of existing facilities and infrastructure.

Opportunities to have a major beneficial effect on energy consumption may come through new technologies and a reduction of waste produced. The latter is a function of personal preferences

and choices, as well as pressure (economic and political) on manufacturers to reduce wasteful practices such as the amount of packaging used for their products. More fuel efficient vehicles could result in a significant reduction in fuel consumption, reducing greenhouse gas emissions and saving the City and private haulers money over the long term. Opportunities to replace aging trucks with flex fuel, natural gas, or hybrid vehicles will be investigated as part of the SWMP Update. New, more fuel efficient construction vehicles are being developed with claims of 10-30% greater efficiency based on a reduction of vehicle weight and better mobility. This alone suggests that there will be some incremental increases in efficiency over the next 15-20 years as older equipment is decommissioned and new equipment is purchased. The City typically replaces both its landfill construction/operations equipment and its garbage trucks every 5 years on a vehicle by vehicle basis (not an entire fleet replacement).

It is important to note that the City is a leader in the capture and reuse of methane from the landfill. Methane is produced through the decomposition of wastes and is released to the atmosphere where it contributes to global warming. However, at the Rapp Road landfill methane is captured through an active collection system that applies a vacuum beneath the landfill surface, collecting methane and other constituents that contribute to odors. The gas is piped to a privately owned gas to energy facility located at the landfill. This facility has been in operation since 1998, burning the gas through specially designed internal combustion engines that turn a turbine to create electricity. At present, the facility generates approximately 1.8 megawatts of power and does not use all the available gas. The balance is currently destroyed through flares. The City is entertaining bids to construct another similar facility on-site that would utilize the remaining methane plus that generated by the proposed Eastern Expansion and produce approximately 6 megawatts of power.

The carbon footprint provided in SDEIS Section 3.8.2.3 shows a reduction in methane emitted by landfill operations for the proposed conditions (Eastern Expansion plus existing landfill) the period of peak landfill gas generation, estimated to occur during 2017. The reason for the reduction is an increase in landfill gas collection efficiency from 70 percent to 80 percent. Since 2007, the City has improved its gas collection system considerably and even higher efficiencies may be achieved by 2017 due to more efficient processes and equipment. The higher efficiency means less harmful methane gas is released to the atmosphere and more is available to produce electricity.

The Eastern Expansion will eliminate the need for a short-term, long haul solution that will have the effect of saving gas/diesel fuel (as much as 655,200 gallons per year) and preventing another

source of CO₂ emissions that impact global warming (approximately 7,338 tons per year of CO₂).

The expansion will require the relocation of landfill facilities to two adjacent parcels. An existing home will be renovated to accommodate the landfill offices, and other new buildings will be constructed. This presents the opportunity to improve upon the energy efficiency of the existing structures. New construction will utilize more energy efficient materials and will be better insulated. Where applicable, light fixtures will include energy efficient compact florescent bulbs.

The City will consider implementing the following best management practices (some of which are already in place as noted) to reduce its energy consumption:

- City currently has policy in place to limit idling of equipment and vehicles to 5 minutes. This policy will continue to be enforced.
- Use of energy efficient appliances (refrigerator, microwave, etc.) and compact fluorescent bulbs, where applicable.
- Use of more energy efficient pumps and blowers as new technology becomes available.
- Purchase of more fuel efficient vehicles and equipment as older equipment is phased out.
- Continued regular equipment maintenance. This occurs weekly with immediate repairs for improperly functioning equipment.