



## DMMC In Depth

# Cooking Oil Recycling: Options for environmental and financial benefits

A DMMC *In Depth* is a guide that informs mayors and managers about a timely and significant issue in a summarized fashion. Like a DMMC White Paper, it is meant to help members better understand an issue, solve a problem, or make a decision.

### Background

Sewer pipe backups due to the improper disposal of used cooking oil is costly for residents, businesses and municipalities. Solutions exist to alleviate and eventually eliminate this problem. When implemented, these practices have the potential to significantly decrease the amount of money municipalities spend on sewer repair while simultaneously increasing the environmental health of the community.

Fats, oils, and grease (FOG) are responsible for 47% of the approximately 36,000 sewer overflows that occur annually in the United States. Sewer pipes are designed to carry three things; waste water, human bodily waste, and toilet paper. When used cooking oil and grease are emptied into a sink, they travel through the pipes and into the sewer system combining with other wastewater. The fats from the FOG bond with the chemicals in the sewer system forming aggregates of these chemicals that build up and block the pipes. The fats in the grease are separated into their component parts, fatty acids and glycerol. The fatty acids then bind with calcium found in the sewers producing a soap-like compound. When sewer levels rise, the newly formed fat-calcium soap compounds attach to the ceiling of the pipes, creating stalactite-type structures. This disrupts the flow of household wastewater traveling to the wastewater treatment plant. A buildup could occur at any point along the wastewater disposal process.

Obstructions can create home plumbing problems, backups at the neighborhood level, and blockages at the city level during the later stages of the water treatment process. Even small amounts of used cooking oil poured into a drain in each household can exacerbate the problem. When residents living in large apartment buildings discard grease into a drain, it combines with the discarded grease from other residents in the same complex, quickly multiplying the quantity of grease added to the sewer system. A single liter of used cooking oil that has entered the sewer system pollutes approximately 1,000 liters of water. The oil spreads into a fine layer which impinges on the production and productivity of underwater flora and fauna.

### Options

A variety of approaches have been implemented to assist residents with proper disposal of used cooking oil. Throughout the year, some municipalities hold one-day community-wide special events to collect the oil. An event scheduled at a time when the likelihood of residents using greater amounts of cooking oil – for example the Saturday after Thanksgiving – provides residents with an amenable option for

disposal. Residents are encouraged to collect their used cooking oil, place it into a leak-proof container and bring it to the municipal collection site.

SCARCE (School, Community Assistance, Recycling, and Composting Education), a non-profit environmental education agency located in Glen Ellyn, offers municipalities the opportunity to become a permanent used cooking oil collection site. Through a grant from the DuPage Foundation, SCARCE is able to provide 275-gallon collection containers as well as removal services to interested municipalities. Refer to their program [Cooking Oil Recycling](#) for additional information.

Permanent collection locations provide residents with the opportunity to dispose of used cooking oil at a time that is convenient for them. Residents collect their used cooking oil and bring it to the municipal storage container site. When the receptacle is full, the municipality has multiple options. The oil can be removed, sold to a third party, or processed and converted into electricity or biodiesel for use in municipal vehicles and machines.

Many municipalities use diesel fuel, which is nonrenewable and petroleum-based. Biodiesel fuel possesses chemical characteristics similar to petroleum-based diesel and can be used as a substitute or blended with petroleum diesel in any percentage without reducing fuel economy. Using biodiesel produces less pollution than using petroleum diesel fuel and vehicle or machines that operate using diesel can use biodiesel fuel. The [Downers Grove Sanitary District](#), a designated permanent collection site, converts collected used cooking oil into electricity at the treatment plant. As part of their [Resource Recovery](#) program, the [Glenbard Wastewater Authority](#) is currently upgrading their treatment facility to accept FOG waste and convert it to energy. According to the U.S. Energy Information Administration, because of biodiesel's environmental benefits and ease of use, biodiesel consumption in the United States has grown from approximately ten million gallons in 2001 to about 1.5 billion gallons in 2015. Refer to the agency's [Biofuels: Ethanol and Biodiesel Explained Use of Biodiesel](#) for additional information.

## Marketing

Once a recycling program is in place, informing and educating residents is crucial to its success. Several communities list cooking oil collection information on their website as well as on the water and sewer bills sent to residents. Understanding the options available and the benefits of cooking oil recycling can help residents make informed choices. Throughout DuPage County, used cooking oil is an underutilized and virtually limitless energy source.

Founded in 1962, the [DuPage Mayors and Managers Conference](#) (DMMC) is a council of municipal governments representing over 1,000,000 people. A coalition of cities and villages, the Conference works to voice municipal concerns on local, regional, state, and national issues. It also serves its members and the region by fostering intergovernmental cooperation. The Conference is a not-for-profit organization supported by membership dues and grants.