



## Legislation Text

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File #: 17-167, Version: 1

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**TO:** Mayor Collins and Town Council Members

**FROM:** Kevin Burke, Town Manager  
Duncan Miller, Town Clerk

**DATE:** May 11, 2017

**DEPARTMENT:** Town Manager

### **AGENDA TITLE:**

**Discussion of Ordinance Number 2017-03 Vehicle Emissions for Diesel Sanitation Trucks and Discussion of Soliciting Proposals for Town-wide Residential Collection**

### **SUMMARY STATEMENT:**

In January 2016, the Mayor and Council identified several Quality of Life Initiatives including the policy concept of franchising trash collection. Later in the year, staff and Council divided the policy question into two tiers. Tier one was focused upon simpler legislative improvements to existing service. Tier two was focused upon exploring a single hauler.

On October 27, 2016, the Town Council adopted Ordinance Number 2016-12 amending the Sanitation Ordinance. It made the following four changes:

1. Vehicles with diesel engines shall be no older than seven years and all vehicles shall use "operation-at-idle" and "smart back up" technology;
2. Licensees shall provide containers free of noticeable defects and in good working order;
3. Licensees shall make application to the appropriate regulatory authority to allow for once-per-week solid waste collection and once-per-week recyclable collection. However, they may continue to offer twice-per-week collection of solid waste and weekly collection of recyclables;
4. The Town was divided into two residential zones. Collection is limited to two days in each zone (Monday and Thursday OR Tuesday and Friday).

During the discussion prior to adoption, one of the licensed providers requested that the Town consider granting waivers for older diesel engines so long as they were fueled with biodiesel. The Council adopted the ordinance as presented but directed staff to research emissions standards and biodiesel fuel and report back to Council with recommended amendments prior to the enforcement date of July 1, 2017. This study session seeks to resolve that issue.

This study session further seeks to resolve the interest level of the Mayor and Council in exploring the single hauler question. To that end, staff is re-attaching the draft Request for Proposal (RFP) that was developed in 2016. The draft RFP seeks to maintain services enjoyed by Paradise Valley

residents (such as walk-up service) as well as address the numerous goals associated with this policy discussion. These included:

- Reduce Frequency of Trucks on the Street
- Reduce Wear & Tear on Streets
- Reduce Days of the Week Bins on the Street
- Reduce Noise
- Reduce Rates
- Improve Environmental Sustainability

Staff proposes Mayor and Council discuss this issue first, as it may render the more specific discussion regarding diesel engines moot since vehicle requirements could be addressed in the RFP. Discussion will focus upon the interest in soliciting RFP's with a clear understanding that if the Council does not like the results of that process, they can reject all proposals. This also provides an opportunity to get concrete data on rate comparisons, reductions in trip frequency, and service possibilities. The Arizona Towns of Fountain Hills, Queen Creek, Tolleson and Litchfield Park have recently gone to a single hauler solution. In drafting this RFP, staff examined their documents.

For purposes of resolving the pending conflict regarding age of collection vehicles in Ordinance 2016-03, the remainder of this action report provides information on that topic.

### **Heavy-Duty Diesel Engine Standards**

In December 2000, the United States Environmental Protection Agency (EPA) adopted emissions standards for model year 2007 and later heavy-duty vehicle engines. The rule included two components: (1) emission standards, and (2) diesel fuel regulations.

The standards reduce emissions to 0.2 gram per brake horsepower hour for nitric oxide (NOx) and 0.01 gram per brake horsepower hour for particulate matter (PM). (PM is formed by the incomplete combustion of fuel in diesel engines. NOx is formed in small amounts when fuel is burned at high temperatures and pressures during an engine's combustion process.)

The PM emission standard took full effect in 2007. The NOx standard was phased-in for diesel engines between 2007 and 2010. While it is common to hear people refer to the "2007 standard" and the "2010 standard", legally, there is no differentiation. Moreover, the phase-in of the NOx standard was done not in incremental reductions, but rather as a percentage of engines manufactured that had complied with the 2010 standard. In other words, some engines produced between 2007 and 2010 comply with the higher NOx standard and some did not.

The diesel fuel regulations were met by changing to ultra-low sulfur diesel fuel and a reformulation of engine oils. These are currently in place wherever diesel is purchased.

### **Biodiesel**

Biodiesel is diesel fuel made with vegetable oils, animal fats, or recycled restaurant cooking oil. EPA analysis shows that biodiesel has the lowest carbon emissions of the fuels tested including: ultra-low-sulfur diesel, gasoline, corn-based ethanol, and compressed natural gas. Depending on the biodiesel blend and the engine, carbon emissions may be reduced from 57% to 86%. Another notable advantage to using biodiesel is that it causes engines to run quieter and smoother because of its lubricating qualities. It is also less combustible than petroleum and compressed natural gas

which may impact safety in collisions.

Biodiesel fuels sanitation vehicle fleets in New York, San Francisco, Seattle, Olympia, Portland, Berkeley, Grand Rapids, Flagstaff and Pittsburgh to name a few.

The limitation to biodiesel is the extraordinary variety of biodiesel products that make oversight extremely difficult. Moreover, carbon emissions are not part of the 2010 standard and not measured by the State emissions testing program. That State system focuses on opacity. Therefore, the ability to compare environmental benefits of a 2010 or newer engine versus a 2007 engine running bio diesel were not feasible.

### Discussion

The purpose of the vehicle age requirement in the ordinance was to reduce truck engine noise and improve environmental sustainability. The ordinance adopted in October requires licensed providers not use trucks older than seven years. However, some smaller providers argued this would be a financial burden such that they would no longer be able to offer services in Paradise Valley.

The below matrix depicts engine types and associated environmental sustainability benefits. While staff was unable to quantify the comparable benefits of the various emission improvement tools, it can show a comparison against the baseline.

**Emissions Matrix**

Engine Type	State Opacity	Lower CO2	PM	NOx
<b>Baseline</b> - Pre 2007 engine using ultra low sulfur diesel	X			
Pre 2007 engine using biodiesel	X	X		
Post 2007 engine using biodiesel	X	X	X	
Post 2010 engine using biodiesel	X	X	X	X
Post 2010 engine using ultra low sulfur diesel	X		X	X

The highlighted rows above show the current policy choice. Ordinance 2016-03 requiring collection trucks be seven years or newer would have the benefits associated with “Post 2010 engine using the ultra low sulfur diesel.” The hauler proposed amendment would have the benefits associated with “Post 2007 engine using biodiesel.”

**Recommendation**

If the Mayor and Council decide to solicit Requests for Proposal, staff recommends it suspends implementation of engine age requirement in Ordinance 2017-03 scheduled to take effect July 1, 2017.

If the Council chooses not to solicit an RFP for single hauler, staff recommends amending Ordinance 2017-03 to allow post 2007 engines with bio diesel or compressed natural gas. This would be a change to Town Code Section 8-3-6(A)(5) Vehicle Requirements:

*Starting on July 1, 2017, all vehicles with diesel engines shall be model year 2010 or newer or model year 2007 and use alternative fuel such as biodiesel or compressed natural gas.*

**ATTACHMENT(S):**

Ordinance 2017-03  
PowerPoint