

Problem Statement (Updated for May 2023 Analysis)			
A key factor in the economic analysis of the mulching program’s future is the cost to transport leaves (mulched or otherwise) from Vienna to the disposal facility. We now know that rental trucks with drivers (including fuel) are an option at \$105 per hour.We also know that round trip from Vienna to the disposal facility site is assumed to be 90 minutes transit and 10 minutes unloading (100 minutes), for a total round-trip cost of 1.66 hours x \$105 = \$175.Do you have an apples-to-apples comparison to identify the total round-trip cost for the Town to do the same with our ownequipment and labor? This information will ultimately be needed by Councilmembers when deciding between Options 2 and 3. I’d envision the comparison to contain such factors as:			
- Blended Labor Rate per Hour (including benefits and overhead) - Maintenance Cost per Hour - Fuel Cost per Hour (keeping in mind that over-the-road consumption may not be the same as in-town fuel consumption; - and fuel costs are escalating) - Other Fixed Costs (financing, insurance, licensing, etc.)			
Assumptions Made in This Analysis - Long Haul			
Item	Value	Source	
Blended labor rate including benefits & overhead	\$55.00 /hour	4/15/2021 NewGen Report Table 1-2	
Maintenance cost - Tandem truck	\$6.49 /hour	4/15/2021 NewGen Report Table 1-2	
Fuel cost - Tandem truck	\$15.70 /hour	4/15/2021 NewGen Report Table 1-2	
Leaf Capacity of ToV Tandem Truck	14.0 cubic yards/truck	2020-21 TOV Leaf Collection Analysis (July 2022 Analysis used 21 CY / truck)	
Leaf Capacity of Rental Tandem Truck	17.0 cubic yards/truck	Fairfax County Contract Specification (July 2022 Analysis used 25 CY / truck)	
Hourly cost 25 cubic foot capacity Tandem truck rental	\$105.00 /hour	Previous analysis used the most recent quote from Fairfax County is \$82.81/hour. Includes, driver, fuel, Insurance and maintenance costs. \$105/hour is based on 2023 TOV quote.	
Tandem Truck Usage per year	1,000 hours		
Yearly Insurance Cost for 3 Tandem Trucks & 3 1 Ton Dump Trucks	\$5,200.00	From TOV Finance	
Yearly Insurance Cost for 1 Tandem Truck	\$866.67 /year	From TOV Finance	
Hourly Insurance Cost based on 1000 Hours per Year Usage	\$0.87 /hour	From TOV Finance	
Tandem Truck Capital Cost	\$200,000.00	Recent DPW Survey of Tandem Truck Costs	
Tandem Truck Useful Lifetime	15 years	Consistant with the Town of Vienna Vehicle Replacement Plan: Tandem Trucks have a 15 year lifetime. One-Ton Trucks have a 10 year life.	
Tandem Truck Useful Lifetime Assuming 1000 hours per year usage	15,000 hours		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$13.33 /hour		
Diesel Fuel Cost per Gallon (2021 Estimate from AAA)	\$3.03 /gallon	https://gasprices.aaa.com/?state=US	
Diesel Fuel Cost per Gallon (May 2023 Analysis)	\$3.72 /gallon	From TOV DPW (May 2023 Analysis)	
Round Trip Mileage from TOV to Disposal Facility	43 miles		
Tandem Truck Diesel Fuel Consumption	7.0 miles/gallon	From TOV DPW	
Gallons of Diesel Fuel Consumed (Round Trip from TOV to Disposal Facility) 43 miles	6.1 gallons		
Diesel Fuel Cost 1 year ago (Round Trip from TOV to Disposal Facility - 43 miles)	\$18.61		
Diesel Fuel Cost Current (Round Trip from TOV to Disposal Facility - 43 miles)	\$22.85		
Cost to Haul 25 Cubic Yards of Leaves from TOV to Disposal Facility Using Hourly Fuel Rate			
Delivery Time	1.67 hours	Round trip from Vienna to the Disposal Facility is 90 minutes transit and 10 minutes unloading (100 minutes)	
Item	Town of Vienna 14 Cubic Yard Capacity	Tandem Rental 25 Cubic Yard Capacity (@ \$82.81/hour per July 2022 Analysis)	Tandem Rental 17 Cubic Yard Capacity (@ \$105/hour per May 2023 Analysis)
Blended labor rate including benefits & overhead	\$91.67	\$138.02	\$175.00
Maintenance cost - Tandem truck	\$10.82		
Fuel cost - Tandem truck Using Hourly Fuel Rate	\$26.17		
Insurance Cost - Tandem truck	\$1.44		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$22.22		
* Adjustment Factor for Truck Size (TOV is 14 yd³, Rental is 17yd³)	1.79	1.00	1.47
Total Cost	\$271.99	\$138.02	\$257.35
Cost to Haul 25 Cubic Yards of Leaves from TOV to Disposal Facility Using Diesel Fuel Cost per Gallon (2021 Estimate from AAA) of \$3.029 per Gallon & 7 miles per gallon			
Blended labor rate including benefits & overhead	\$91.67	\$138.02	\$175.00
Maintenance cost - Tandem truck	\$10.82		
Fuel Cost - Tandem Truck Using Diesel Fuel Cost per Gallon (2021 Estimate from AAA) of \$3.029 per Gallon & 7 miles per gallon	\$18.61		
Insurance Cost - Tandem truck	\$1.44		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$22.22		
* Adjustment Factor for Truck Size (TOV is 14 yd3, Rental is 17yd3)	1.79	1.00	1.47
Total Cost	\$258.49	\$138.02	\$257.35
Cost to Haul 25 Cubic Yards of Leaves from TOV to Disposal Facility Using Diesel Fuel Cost per Gallon (May 2023 Analysis) of \$3.72 per Gallon & 7 miles per gallon			
Blended labor rate including benefits & overhead	\$91.67	\$138.02	\$175.00
Maintenance cost - Tandem truck	\$10.82		
Fuel Cost - Tandem Truck Using Diesel Fuel Cost per Gallon (May 2023 Analysis) of \$3.72 per Gallon & 7 miles per gallon	\$22.85		
Insurance Cost - Tandem truck	\$1.44		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$22.22		
* Adjustment Factor for Truck Size (TOV is 14 yd3, Rental is 17yd3)	1.79	1.00	1.47
Total Cost	\$266.07	\$138.02	\$257.35
* Since the Town of Vienna Truck capacity is 21 cubic yards of leaves and the Rental Truck capacity is 25 cubic yards of leaves, the Town of Vienna Truck has to make 1.19 times as many trips to Disposal Facility to deliver the same amount of leaves.			

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Assumptions Made in This Analysis - Short Haul			
Item	Value	Source	
Blended labor rate including benefits & overhead	\$55.00 /hour	4/15/2021 NewGen Report Table 1-2	
Maintenance cost - Tandem truck	\$6.49 /hour	4/15/2021 NewGen Report Table 1-2	
Fuel cost - Tandem truck	\$15.70 /hour	4/15/2021 NewGen Report Table 1-2	
Leaf Capacity of ToV Tandem Truck	21.0 cubic yards/truck	2020-21 TOV Leaf Collection Analysis	
Leaf Capacity of Rental Tandem Truck	25.0 cubic yards/truck	Fairfax County Contract Specification	
Hourly cost 25 cubic foot capacity Tandem truck rental	\$105.00 /hour	Previous analysis used the most recent quote from Fairfax County is \$82.81/hour. Includes, driver, fuel, Insurance and maintenance costs. \$105/hour is based on 2023 TOV quote.	
Tandem Truck Usage per year	1,000 hours		
Yearly Insurance Cost for 3 Tandem Trucks & 3 1 Ton Dump Trucks	\$5,200.00	From TOV Finance	
Yearly Insurance Cost for 1 Tandem Truck	\$866.67 /year	From TOV Finance	
Hourly Insurance Cost based on 1000 Hours per Year Usage	\$0.87 /hour	From TOV Finance	
Tandem Truck Capital Cost	\$200,000.00	Recent DPW Survey of Tandem Truck Costs	
Tandem Truck Useful Lifetime	15 years	Consistant with the Town of Vienna Vehicle Replacement Plan: Tandem Trucks have a 15 year lifetime. One-Ton Trucks have a 10 year life.	
Tandem Truck Useful Lifetime Assuming 1000 hours per year usage	15,000 hours		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$13.33 /hour		
Diesel Fuel Cost per Gallon (2021 Estimate from AAA)	\$3.03 /gallon	https://gasprices.aaa.com/?state=US	
Diesel Fuel Cost per Gallon (May 2023 Analysis)	\$3.72 /gallon	From TOV DPW (May 2023 Analysis)	
Round Trip Mileage from TOV to Disposal Facility	43 miles		
Tandem Truck Diesel Fuel Consumption	7.0 miles/gallon	From TOV DPW	
Gallons of Diesel Fuel Consumed (Round Trip from TOV to Disposal Facility) 43 miles	6.1 gallons		
Diesel Fuel Cost 1 year ago (Round Trip from TOV to Disposal Facility - 43 miles)	\$18.61		
Diesel Fuel Cost Current (Round Trip from TOV to Disposal Facility - 43 miles)	\$22.85		
Cost to Haul 25 Cubic Yards of Leaves from TOV to Disposal Facility Using Hourly Fuel Rate			
Delivery Time	1.67 hours	Round trip from Vienna to the Disposal Facility is 90 minutes transit and 10 minutes unloading (100 minutes)	
Item	Town of Vienna 21 Cubic Yard Capacity	Tandem Rental 25 Cubic Yard Capacity (@ \$82.81/hour per July 2022 Analysis)	Tandem Rental 25 Cubic Yard Capacity (@ \$105/hour per May 2023 Analysis)
Blended labor rate including benefits & overhead	\$91.67	\$138.02	\$175.00
Maintenance cost - Tandem truck	\$10.82		
Fuel cost - Tandem truck Using Hourly Fuel Rate	\$26.17		
Insurance Cost - Tandem truck	\$1.44		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$22.22		
* Adjustment Factor for Truck Size (TOV is 21 yd³, Rental is 25yd³)	1.19	1.00	1.00
Total Cost	\$181.33	\$138.02	\$175.00
Cost to Haul 25 Cubic Yards of Leaves from TOV to Disposal Facility Using Diesel Fuel Cost per Gallon (2021 Estimate from AAA) of \$3.029 per Gallon & 7 miles per gallon			
Blended labor rate including benefits & overhead	\$91.67	\$138.02	\$175.00
Maintenance cost - Tandem truck	\$10.82		
Fuel Cost - Tandem Truck Using Diesel Fuel Cost per Gallon (2021 Estimate from AAA) of \$3.029 per Gallon & 7 miles per gallon	\$18.61		
Insurance Cost - Tandem truck	\$1.44		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$22.22		
* Adjustment Factor for Truck Size (TOV is 21 yd³, Rental is 25yd³)	1.19	1.00	1.00
Total Cost	\$172.33	\$138.02	\$175.00
Cost to Haul 25 Cubic Yards of Leaves from TOV to Disposal Facility Using Diesel Fuel Cost per Gallon (May 2023 Analysis) of \$3.72 per Gallon & 7 miles per gallon			
Blended labor rate including benefits & overhead	\$91.67	\$138.02	\$175.00
Maintenance cost - Tandem truck	\$10.82		
Fuel Cost - Tandem Truck Using Diesel Fuel Cost per Gallon (May 2023 Analysis) of \$3.72 per Gallon & 7 miles per gallon	\$22.85		
Insurance Cost - Tandem truck	\$1.44		
Tandem Truck Capital Cost Hourly Depreciation assuming 0% Interest	\$22.22		
* Adjustment Factor for Truck Size (TOV is 21 yd³, Rental is 25yd³)	1.19	1.00	1.00
Total Cost	\$177.38	\$138.02	\$175.00
* Since the Town of Vienna Truck capacity is 21 cubic yards of leaves and the Rental Truck capacity is 25 cubic yards of leaves, the Town of Vienna Truck has to make 1.19 times as many trips to Disposal Facility to deliver the same amount of leaves.			