

CITY OF GLADSTONE PUBLIC WORKS DEPARTMENT
PROPOSED VEHICLE REPLACEMENT MODEL

One of the most challenging issues concerning municipal fleet management is determining the most cost-effective time to replace vehicles and equipment. Disposing of equipment too soon wastes productive fleet life and capital funds. Waiting too long to dispose of equipment creates a burdensome, unreliable unit that can strain your maintenance budget, and wastes costly man hours due to equipment down time and unplanned work delays.

The goal of the Gladstone Public Works Department is to keep vehicles and equipment in sound operating condition, utilizing routine preventative maintenance and following a sensible, cost-effective replacement schedule as our fleet ages. Maintenance costs represent a significant portion of the total cost to own and operate vehicles and heavy equipment. These costs tend to increase as equipment ages. Escalating maintenance costs are a key factor in determining when to replace a vehicle. In addition to the added cost of maintenance with an aging fleet, there is the additional cost to the city when a vehicle is undergoing repairs and is not available for use.

As with other aspects of vehicle and equipment management, replacing a vehicle too soon or too late wastes the city's money. To best steward our public funds, the Public Works Department is proposing a standardized vehicle replacement scoring method, based on industry standard guidelines and years of experience in operating and maintaining vehicles and equipment.

As vehicles reach the replacement threshold, an evaluation will be performed by the Public Works Department. If the evaluation determines the vehicle would be economical to retain for an additional year, the vehicle will be targeted for retention. Vehicles and equipment will be replaced when they are at the end of their economic life, no longer safe to operate, cannot reliably perform their intended function, or other demonstrated cost saving to the City of Gladstone.

The attached spreadsheet and accompanying charts demonstrate the long term fiscal advantage of replacing equipment before it becomes a costly liability to the city.

GLADSTONE PUBLIC WORKS PROPOSED VEHICLE REPLACEMENT SCORING SYSTEM	
Factor	Points
Age	One Point for each year of chronological age, based on in-service date
Usage	Odometer based vehicles: One point for each 10,000 miles Hour meter based small equipment: One point for each 325 hours Hour meter based large equipment and trucks: One point for each 750 hours
Type of Service	One to five points based on type of service the equipment had performing during most of its life. The more severe the type of service performed, the higher the number assigned. Example: Administrative auto: One point Sewer jetter : Five points
Reliability	Ratio of the number of normal repair occurrences over the last twelve months of service (LTM) divided by the number of normal repair occurrences in the vehicles second twelve (STM) months of life. Example: if the LTM is 6 and the STM is 2, the Reliability Score would be 3. $(6 / 2 = 3)$
Maintenance Costs	Points assigned based on total life to date (LTD) maintenance and repair (not including accident damage) and the original price of the vehicle: A vehicle whose LTD repair costs exceed the original purchase price: Five points A vehicle whose LTD repair costs is 80% of the original purchase price: Four points A vehicle whose LTD repair costs is 60% of the original purchase price: Three points A vehicle whose LTD repair costs is 40% of the original purchase price: Two points A vehicle whose LTD repair costs is up to 20% of the original purchase price: One point
Condition	One to five points based on inspection of the body, underbody, structural members, rust, interior condition, review of accident and repair history, operational and safety problems and anticipated major repairs. The higher the points, the worse the condition of the vehicle.

POINTS	CONDITION
Under 20	Excellent
20 – 22	Good
23 - 30	Qualifies for Replacement 23 points for sedans and light trucks 28 points for heavy-duty vehicles and off road equipment with gross vehicle weight exceeding 10,500 lbs
31 or more	Needs Immediate Consideration

LTM Last Twelve Months
STM Second Twelve Months
LTD Life to Date

VEHICLE/EQUIPMENT INVENTORY LIST

					15 Year Replacement Plan															
Year	Date purchased	Item description (make and model)	Milage/Hours	Estimated Replacement Cost in 2016 Dollars	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028	FY2029	FY2030	FY2031
1970	June-84	Ford F-600 5 yrd dump truck	48,293	\$64,000		\$97,000										\$108,349				
1975	June-83	Ford 1 ton flat bed, purchased used	200,00+	\$33,000																
1976	June-83	Ford tractor	1143	\$25,000								\$29,851								
1983	June-83	Ford tractor 1900	572	\$25,000																
1984	June-85	Case backhoe 580 SE	5837	\$100,000		\$100,000										\$134,392				
1985	June-83	Tar pot	n/a	\$10,000																
1986	August-00	International S1700 sewer jet, purchased used	148,312	\$350,000				\$382,454												
1987	April-87	Chevrolet 3/4 ton pickup	73,992	\$35,000		\$35,000										\$47,037				
1989	June-89	Ford 1 ton dump	55,679	\$45,000							\$52,167									
1989	July-89	Case backhoe 580 K	5268	\$100,000				\$112,551											\$146,853	
1991	April-91	Dodge 3/4 pickup w/lift gate, rack	62,318	\$35,000			\$37,132										\$49,902			
1992	July-92	Dodge 1/2 ton pickup	77,681	\$30,000																
1994	February-94	Chevrolet 1/2 ton w/lift gate, rack	88,986	\$30,000				\$33,765											\$44,056	
1997	February-97	Chevrolet 1/2 ton ext cab 2wd	103,148	\$30,000			\$31,827										\$42,773			
1997	February-97	Chevrolet 1/2 ton xt cab 2wd	84,986	\$30,000					\$34,778											\$45,378
1997	December-96	International Tymco sweeper	22,602	\$280,000			\$297,052													
2000	March-08	Frieghtliner dump truck, purchased used	52,058	\$70,000					\$81,149											
2000	October-08	DD14 roller, purchased used	n/a	\$15,000																
2001	June-01	Chevrolet 1/2 ton pickup 2wd	65,554	\$30,000				\$33,765											\$44,056	
2001	June-01	Chevrolet 1/2 ton pickup 2wd	38,292	\$30,000					\$34,778											\$45,378
2001	June-01	Ford F-550 dump truck	20163	\$45,000					\$52,167											
2001	April-09	Frieghtliner dump truck, purchased used	10,848? New speedo	\$70,000						\$83,584										
2001	June-01	Ford F-550 service truck w/ crane	118,328	\$108,000				\$121,555											\$158,602	
2001	July-01	Exmark lawn mower LZ27DD	n/a	\$18,000		\$18,000										\$24,190				
2006	August-06	Kubota mower KUEZD28F72P		\$18,000				\$20,259											\$26,434	
2008	January-09	Ford F-550 dump truck 4X4	12,238	\$45,000								\$55,344								
2008	January-08	Kubota RTV 1100CW-H		\$18,000						\$20,867										\$27,227
2008	June-08	John Deere mower 0957TC	736	\$18,000																
2010	July-10	Ford Escape	30482	\$24,500											\$31,967					
2010	October-09	Ford F-350 pickup, rack, lift gate	23,831	\$30,000									\$38,003							
2010	October-09	Ford F-350 pickup 4X4, rack, lift gate	21305	\$30,000									\$38,003							
2013	February-13	Exmark lawn mower LZDS902K725	354	\$18,000								\$21,493								
2013	March-13	Case backhoe 580SN	961	\$100,000												\$138,423				
2015	July-15	Ford F-550 service truck w/ crane	3,000	\$108,000									\$136,811							
		Fork lift		\$15,000								\$17,911								
2016	March-16	Ford Escape	0	\$25,000	\$25,000															\$34,815
*TOTAL Expenditures				\$2,057,500	\$25,000	\$250,000	\$366,011	\$382,454	\$321,896	\$202,873	\$156,618	\$69,255	\$55,344	\$212,817	\$31,967	\$313,968	\$138,423	\$92,674	\$420,001	\$152,797

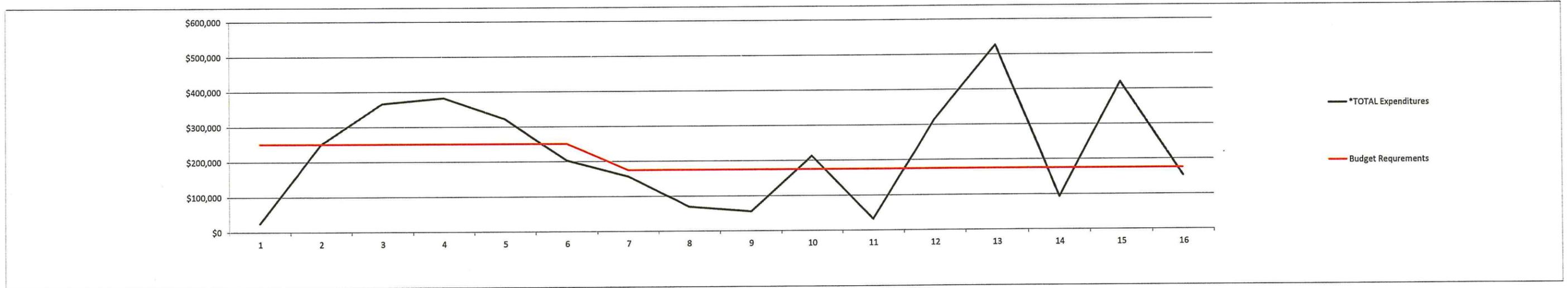
15 YEAR BUDGET IMPACT UNDER PROPOSED REPLACEMENT PLAN

Colors Legend:		Replacement fund beginning balance	\$784,900	\$785,900	\$670,890	\$539,435	\$468,540	\$516,667	\$535,049	\$640,794	\$760,449	\$722,632	\$865,665	\$726,697	\$763,273	\$845,599	\$600,598	
Vehicle/equipment has been eliminated		Budget Requirements	\$251,000	\$251,000	\$251,000	\$251,000	\$251,000	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	\$175,000	
Vehicle/equipment considered for elimination (right sizing the fleet)		*TOTAL Expenditures	\$25,000	\$250,000	\$366,011	\$382,454	\$321,896	\$202,873	\$156,618	\$69,255	\$55,344	\$212,817	\$31,967	\$313,968	\$526,009	\$92,674	\$420,001	\$152,797
		Replacement fund ending balance		\$534,900	\$419,890	\$288,435	\$217,540	\$265,667	\$360,049	\$465,794	\$585,449	\$547,632	\$690,665	\$551,697	\$588,273	\$670,599	\$425,598	\$447,801

REPAIR AND MATERIALS COMPARISON

Future repairs and materials based on historical practices with 3% CPI inflation factor	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$115,927	\$119,405	\$122,987	\$126,677	\$130,477	\$134,392	\$138,423	\$142,576	\$146,853	\$151,259	\$151,259
Future repairs and materials based on proposed 15 year replacement plan with 3% CPI inflation factor	\$100,000	\$80,000	\$64,000	\$51,200	\$40,960	\$32,768	\$33,751	\$34,764	\$35,806	\$36,881	\$37,987	\$39,127	\$40,301	\$41,510	\$42,755	\$42,755

BUDGET REQUIREMENTS AND EXPENDITURES



15 YEAR REPAIR AND MATERIALS COST COMPARISON USING BOTH HISTORICAL PRACTICES AND PROPOSED REPLACEMENT PLAN

