Planning for Vehicle Replacement in the City of Wickliffe

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CERTIFICATION STATEMENT

I hereby certify that the following statements are true:

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ABSTRACT

The City of Wickliffe has experienced a severe loss of operational and capital revenue that has and will continue to affect its ability to meet the growing need for major equipment replacement in the fire, police and public works departments as well as others.

The purpose of this study is to provide research based information and data to the mayor and city council that will assist them in making decisions about the long-term major equipment needs of all departments. Research was conducted that included four basic questions as to how the City of Wickliffe and other communities replaced vehicles.

The research questions were as follows:

1. What factors are currently used by the City of Wickliffe to determine the need for a vehicle to be replaced or repurposed?
2. How would a fleet replacement plan across the entire city allow for maximization of vehicle use?
3. How could a fleet replacement plan allow for budgeting of annual replacement costs?
4. What are alternative funding models for the purchase of vehicles instead of traditional cash purchases?

A literature review was conducted with moderate success in finding literature that was for an entire city's fleet of vehicles. The literature that was reviewed contained substantial information on best practices from other cities across the country that varied in size. While it was some concern as to the size of some studies it was found that most information obtained from the literature had little relevance to the size of the community.

Descriptive research was the research methodology for this paper. Data was obtained through internal interviews with personnel from other city departments within the City of Wickliffe and external interviews with thirty-two fire departments across the State of Ohio. The research obtained from these departments was of primary interest due to the best practices that are being utilized in some departments. It should be noted that there is still an abundance of communities that struggle to pay their employees and that vehicle replacement is no longer a priority for those communities. The recommendations gained from this study included compiling information to in order for others to make a more educated decision about future purchases.

Recommendations:

1. Establish a citywide database of all vehicles which includes out of service time, tracking of repairs and parts and any other information that can be tracked relating to that vehicle.
2. Adapt a rating tool to determine when a vehicle should be considered for replacement.
3. Empower a fleet manager to work with department supervisors to eliminate vehicles that are no longer productive or serve purpose.
4. Develop a matrix of all city vehicles to include type of vehicle, intended use, possible repurposing, predicted replacement date or year along with anticipated replacement cost. It is understood that predicting the replacement cost of a new fire engine twenty to twenty-five years in the future is an educated guest. It is recognized that these costs may have to be updated every few years to maintain accuracy to the database.

5. Work to find purchasing alternatives that do not involve an initial cash payment for the initial purchase. Several leasing tools can be favorable over a short term.

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INTRODUCTION

Statement of the Problem

The Wickliffe Fire Department has had a vehicle replacement plan for the last thirty years but those plans have been put off and revised as other city projects, mostly non-vehicle related, have taken priority for funding. The Fire Department is not the only city department that requires vehicles to perform its duties and responsibilities to the community. Traditionally, fire apparatus has been the most expensive vehicles to replace; public works specialty equipment such as sewer jets and loaders can also be costly. The Chief of Police has also indicated that police vehicles need to be replaced every two to three years. Police vehicles have also not been replaced as scheduled. The city now struggles annually due to available funding to make a determination of what needs to be purchased and what can be put off for a later date.

The City of Wickliffe had been fortunate to have enough capital expenditure funds in past years that enabled the city to pay for all expenditures in full when needed. The city currently has no levies and relies solely on funding through municipal income tax and real estate taxes. While most capital expenditures are planned for in the short term, long-term initiatives have not been established to maximize recent reductions in funding. In the past, the city may have planned funding for a couple of years in anticipation of a larger project but funds were always available for city departments to continue their vehicle replacement programs or other large capital purchases.

The problem this research addressed is that the City of Wickliffe has experienced a severe loss of operational and capital revenue that has and will continue to influence its ability to meet the growing need for major equipment replacement in the fire, police and

public works departments as well as others. A plan to meet this growing problem in a systematic and equitable manner does not exist and continues to lead towards a serious situation in managing the city budget and protecting the safety of its citizens.

Purpose of the Study

The purpose of this study was to provide research based information and data to the mayor and city council that will assist them in making decisions about the long-term major equipment needs of all departments.

Research Questions

The following questions were answered by this descriptive research:

1. What factors are currently used by the City of Wickliffe to determine the need for a vehicle to be replaced or repurposed?
2. How would a fleet replacement plan across the entire city allow for maximization of vehicle use?
3. How could a fleet replacement plan allow for budgeting of annual vehicle replacement costs?
4. What are alternative funding models for the purchase of vehicles instead of a traditional cash purchases?

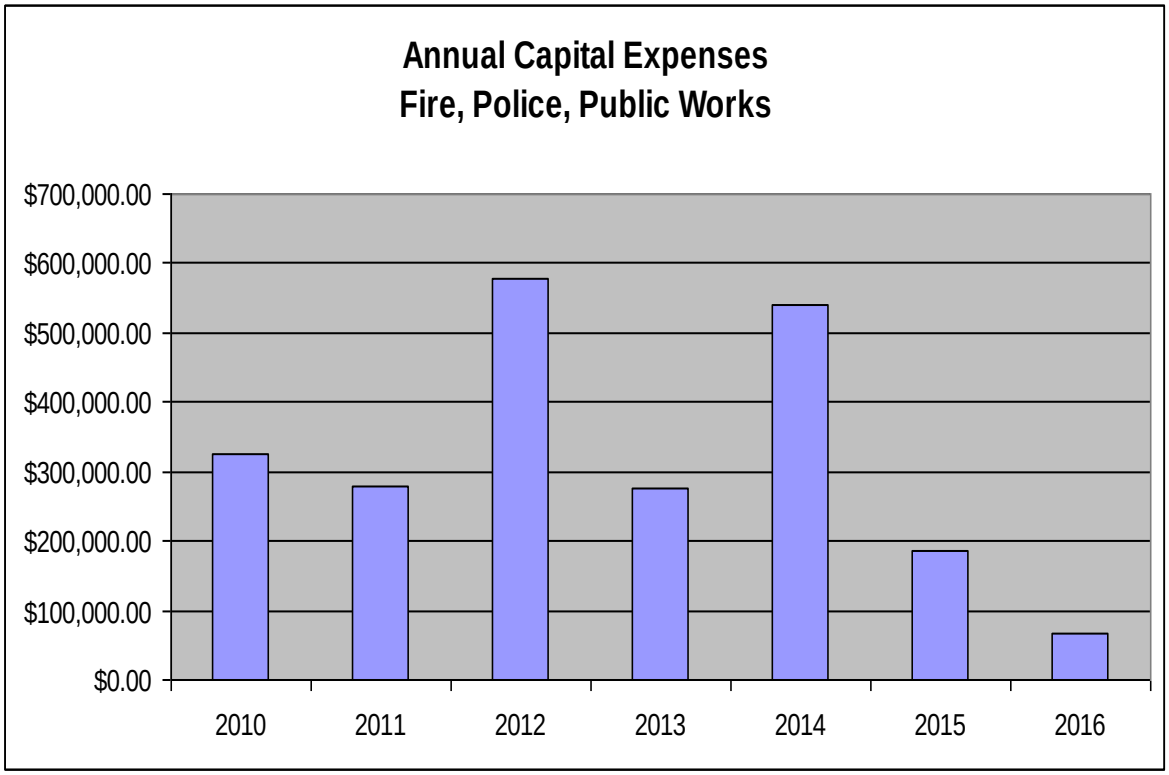
BACKGROUND AND SIGNIFICANCE

The City of Wickliffe is a suburban community located thirteen miles east of downtown Cleveland and approximately three miles from the city border. Another urban community separates the City of Cleveland and the City of Wickliffe. The City of Wickliffe is located in Lake County and provides services to 12,500 residents. The city is four and a half square miles and is approximately seventy percent residential and thirty percent commercial/industrial. Almost seventy percent of the city's funding comes from six primary businesses located within the city through a two percent city income tax. The city employs approximately eighty-five full time employees with several departments utilizing part-time and/or seasonal employees. The fire department is comprised of eighteen full time employees and twenty-two part-time employees with an annual general fund budget of $2,700,000. It is important to note that the fire department line item budget does not include health care, longevity, or labor expenses received from other city departments. These costly expenditures are included in the general fund and are not part of the fire department budget. In the City of Wickliffe, vehicle purchases are encumbered as a capital fund expense. The fire department's budget has remained consistent except for a reduced wage line item for employees who have not been replaced due to attrition and the increase in the overtime budget to compensate for those employees who have retired. While the department's annual budget has remained consistent, the cost of employee hospitalization and labor wages has increased annually.

The loss of revenue has an impact on the purchasing of new vehicles. It is difficult to show impact by simply using a count of vehicles purchased in one year. City wide, vehicles range in cost from $25,000 to $1,000,000. As an example, the city could

purchase twenty sedans in one year, which would seem extreme in comparison to purchasing one fire engine. The graph below represents capital expenses for a specific year for the three major departments in the city. These figures include capital expenses that are also non-vehicle related. Individual departments have other capital expenses besides vehicle purchases. Some of the purchases may be replacement of heating/cooling units, vehicle extrication equipment, ballistic vests, pressure washers, and many other items needed to continue their services. In some cases, public works will purchase a new plow truck and then must wait for a salt spreader to be built for that truck. That purchase may take up to eighteen months and be part of two years of capital purchases. These expenditures in the below graph (Figure #1) do not reflect road improvements, sewer projects or other out of department expenses.

Figure #1



Source: City of Wickliffe Finance Department

The Wickliffe Fire Department has had a vehicle replacement plan for the past thirty years. This plan has been revised on occasion to allow for funding to be directed to other needs within the city. Decreased funding has influenced the community as well as the vehicle replacement plan of the fire department. Other departments in the city have no long-term replacement plans and make determinations of what vehicles need replacement on an annual basis. As a result of no coordinated planning, along with decreased revenue, the fire department vehicle replacement is off its scheduled replacement plan, which will affect future vehicle replacements for the next thirty years.

Currently, the Wickliffe Fire Department operates with two engines, one ladder truck, three medic ambulances, one haz mat tuck, one utility service vehicle, two trailers, three four-wheel drive sport utility vehicles and two sedans. These vehicles respond from one central station. The replacement pattern for these vehicles in the past was for a new engine every ten years and a new medic squad (ambulance) every five years. All vehicles are rotated from front line to secondary response units as new vehicles are purchased. Due to stronger specifications and increased preventative maintenance, vehicles are now on a replacement schedule as indicated in the following matrix. It should be noted that this matrix is up to date and some vehicles are past due for replacement.

Table #1

Vehicle Number	Year Purchased	Type of Vehicle	Anticipated useful life year	Replacement Year
1513	1996	Engine	22	2018
1514	2006	Engine	22	2028
1519	1999	Aerial	24	2023
1512	2012	Ambulance	18	2030
1522	2008	Ambulance	18	2026
1532	2001	Ambulance	18	2019
1511	2012	4 WD Sports Utility	12	2024
1521	2006	Sedan	10	2016
1531	2005	4 WD Sports Utility	12	2017
1541	2004	Sedan	12	2016
1500	2014	4 WD Sports Utility	12	2026
1517	2012	4 WD Pickup/Utility	12	2024
1577	2008	Specialty-Haz Mat	30	2038

Source: Wickliffe Fire Department Vehicle Replacement Schedule

In 2013, the State of Ohio reduced the "local revenue sharing" to municipalities throughout the State of Ohio by fifty percent. This was done because of a large deficit the State had in funding. To compensate for not only revenue losses from the State of Ohio but also for an previous economic down turn and an increase is both labor and material costs, the City of Wickliffe initiated a series of changes in the City Charter to redistribute revenue in order to maintain services. These changes were approved by the community in a referendum to change the Charter in November, 2014 and November, 2015 (Lake County Board of Elections).

A Charter change was needed because all funds coming into the city had been split seventy percent to the operating budget and thirty percent to capital expenditures budget. In 2014, the split of revenue was voted to a split of 85% towards operating expenditures and 15% towards capital expenditures. In 2015, the city returned to the voters and asked that 100% be allocated to the general fund or operating fund and thus

eliminating the capital fund. The change was approved by the voters by a seventy percent affirmation and allowed for maintenance of services without an increase in taxes. The percentage of incoming revenue that had been directed to capital expenditures was now needed to offset state funding reductions to enable public services to remain as staffed and with the expectations of not cutting delivery of services. It essentially eliminated the source of capital funding, which included vehicle replacement, for the entire city.

It should be noted that while operating funds could be used to purchase capital expenditures, capital funds could not be used for operating costs. This was a unique funding initiative set up by the city leaders when the city was incorporated. When the community initially approved the Charter, it was a wise decision that allowed a small city to invest in buildings, parks, infrastructure, and equipment. This division of revenue granted via the Charter allowed the city to have the resources for capital expenditures. Funding was abundant and no long-term planning was needed. Capital expenditures included road improvements, fire apparatus, police vehicles, swimming pools, snowplow trucks, facilities upgrades, large maintenance projects and many other items for the improvement of the city. (Charter of the City of Wickliffe) (City of Wickliffe Capital Expenditures Budget 1980-2010).

Not having a long term or citywide plan, affects every city department according to other Administrators within the city in the form of losing the availability to forecast when vehicles should or need to be replaced. Other city departments that do not have a long-term vehicle replacement plan compete for the same funding. While it is important for other city departments to have vehicles to perform their services, all departments may be better off to plan for large or costly vehicle replacements as a group instead of

independent departments. All the city departments serve the same citizens but they may not be exercising due diligence by not optimizing vehicle purchases. Without implementing a plan, vehicle replacement purchases can and will exceed budgeted abilities.

The simple answer is to increase revenue. There are many benefits and consequences in going to the community for an increase in revenue. In the immediate future with limited revenue, a plan would allow for maximizing the revenue available and allow department heads to make informed decisions about short-term and long-term maintenance. Currently, the only available capital funds for the entire city are through inside millage. The Ohio Revised Code section 5705 refers to inside millage as millage provided by the Constitution of the State of Ohio and is levied without a vote of the people and sometimes referred to as un-voted millage. The State of Ohio's Constitution allows for ten mills of inside millage in each political subdivision. Public schools, counties, townships, and other local governments are allocated a portion of the ten inside mills. This inside millage generates approximately $550,000 annually for the city (City of Wickliffe Budget, 2016). Any additional funding will have to come from the operating budget, which is better known as the general fund. The only budget reductions that are currently available is the further reduction of personnel which will affect services.

Without a plan, city council evaluates all the capital expenditures requests each year and makes a decision on where to best spend the available capital dollars. Some upcoming capital expenditures will be more than a $1,000,000 and obviously could not be funded with only $550,000 available on an annual basis. This places a burden on City Administrators for long-range planning and maintenance purposes. Maintenance is

always a priority in protecting assets of the community. However, maintenance plans can be reduced in final years of a vehicle or building if it is known that it is going to be replaced so long as it does not jeopardize the safety of the community. When a decision must be made on replacing fire apparatus, police cars and snow plow trucks it becomes difficult. All three vehicles are important to maintain public safety. Road repairs are just as important to public safety and must take some type of priority. While it is important to develop a plan for replacement of capital expenditures, it is just as important to develop a plan to increase revenue to adequately support the needs of the community. While revenue enhancement is needed, the traditional way of paying cash for all purchases will most likely have to be revisited. Lease to own and rental options may be a form of spreading the cost of a vehicle over several years as opposed to one up front payment.

The problem is not a simple one. The city is not going to get an increase in revenue that has been lost without making changes that must be voted on by the residents. In order for residents to be informed, an assessment needs to be conducted of all city departments for the replacement of vehicles. Once an assessment is made, an estimated or yearly cost can be determined. Several ways of funding or generating revenue to fund this program will have to be investigated. The immediate benefit of having a plan is that all City Departments would know when vehicles or other capital assets are being replaced. With that planning, maintenance decisions can be made more wisely and certainly more economically.

No action has been taken to correct the situation. In 2016, the Fire Department was fortunate to receive grants for some needed purchases. Those grants allowed other departments to maintain funding due to the critical nature of one of the pending fire

department expenditures. The vehicle replacement system that is currently being used is destined for failure when needs exceed funding capabilities. Due to a lack of standardization and available funding, the fire department will be in need of $2,480,000 in vehicles over the next six years. This problem will be compounded by the need of at least $1,500,000 in police and public works vehicles during that same period. Exceptions will have to be made with respect to replacing vehicles in a timely manner. Those exceptions will have impact on all city departments and the services they provide.

The significance of this study shows that data needs to be obtained and reviewed so that informed and educated decisions can be made by city leaders. A long-term solution to a clearly identified problem is not solved by making short-term decisions.

LITERATURE REVIEW

There are many studies on municipalities needing to replace fire apparatus, police vehicles, snowplow trucks and general use vehicles. In researching materials for this research paper, it was discovered that while not identified in proper research, there are a series of best practices that are being used across the country to make determination on timely vehicle replacements that are economically prudent for those communities.

The City of Wickliffe traditionally used capital funding for vehicle replacement. Capital funding was provided through a distribution of incoming funds in accordance with the City of Wickliffe Charter. In 2015, the voters of the City of Wickliffe, at the recommendation of the mayor, council and city administrators, changed the Charter that resulted in no funding being allocated to a capital fund (Lake County Election Board, November 2015). The sole source of revenue for capital expenditures is inside millage

that collects approximately $550,000 annually (City of Wickliffe, Annual Budget, 2016). Any additional funding towards capital asset replacement including vehicle replacement would come from the general fund. All funds in the general fund were directed to providing services and not vehicle replacements (City of Wickliffe, Annual Budget, 2016).

City Administrators have no overall plan to replace vehicles throughout the city. "A rational replacement schedule is essential to sound resource management" (International City Management Association, 1988. p. 178). The Wickliffe Fire Department vehicle replacement plan continues to get pushed back due to lack of funding. "It is the job of city government — elected officials and staff — to deliver city services as effectively and efficiently as possible. To fulfill this mission, city staff must have a dependable fleet. It is tempting to keep operating the fleet the "way it's always been operated" and to delay vehicle and equipment purchases, especially during economic downturns, but freezing equipment purchases is not a sustainable long-term solution." (Rollins, 2012, p. 1).

There is a need to plan for vehicle replacement with the minimal funds that are available so that larger purchases can be planned. "A strategic plan is founded on a vision and continues long after the initial groundwork is set. It is a common-sense tool that sets a clear path for the future, while also allowing the vision to mature and change as time passes. Strategic planning is also a preventative measure designed to assist in achieving maximum effectiveness and equity before a program or a department reaches crisis level. Or, in management terms, strategic planning is "proactive," instead of "reactive."

Semantics aside, strategic planning translates into good common sense" (DiNapoli, 2003, p. 1).

The fire department can look to standards provided by the National Fire Protection Association (NFPA). NFPA 1911 Standard for Inspection, Maintenance, Testing, and Retirement of In-service Automotive Fire Apparatus 2012 Edition (2012) can provide guidance when a vehicle should be replaced. "Apparatus that was not manufactured to the applicable NFPA fire apparatus standards or that is over 25 years old should be replaced" (NFPA, 2012). Currently, the oldest engine the City of Wickliffe owns is a 1996 engine that was manufactured to the 1991 standards. It should be noted that the NFPA standard discusses the ability to get quality replacement parts. In several instances, a third party has manufactured parts to make repairs for older vehicles in Wickliffe. While the third party openly takes responsibility for the part, the part is not being produced or engineered by the manufacturer.

There are no working documents in the City of Wickliffe listing factors or criteria for replacement. The three main uses of vehicles are public works, police department and the fire department. Other departments in the city are small and have two or less vehicles to fulfill their responsibilities. Those smaller departments are primarily issued repurposed vehicles for non-emergent responsibilities. An interview with the Assistant Public Works Director, who served as the Chief or Lead Fleet Mechanic for twenty years, was insightful. "The city uses age, mileage/hours and corrosion or rust to make the initial determination" (R. Strauser, personal communications, November 1, 2016). When asked about a policy or a criteria list to make standard determination of vehicle worthiness, he replied, "there is no standard set of criteria to make a determination of when a vehicle

should be replaced" (R. Strauser, personal communications, November 1, 2016. An interview with the police chief revealed that police vehicles are in need of replacement every two to three years with the basic understanding that he prefers the vehicles to be replaced at or near 100,000 miles. "In pursuit situations, a vehicle with over 100,000 miles is just not safe" (R. Ice, personal communications, November 7, 2016). The police department for the past thirty years had always followed this very basic, fundamental replacement value of two to three years until 2015. In 2017, the Chief stated that he needed to purchase five vehicles just to keep operations running. Overall, of the three main city departments, the fire department was the only department with a written schedule for replacement. While this plan has been shared over the years, "it is an internal document at the fire department and not city policy" (C. Grossman, personal communication, October 6, 2016).

During the interview with the Assistant Service Director, he was asked if a citywide plan would be beneficial. "This would definitely save us money and enable us to make better decisions on annual costs. It would also allow us to make better decisions as vehicles are moved into secondary users throughout the city" (R. Strauser, personal communication, November 1, 2016). There are many aspects to a fleet replacement plan. "A comprehensive approach when developing a cost-effective fleet replacement program is more than just simply having replacement criteria such as age and miles guidelines in place. Instead, the approach should be multi-faceted and contain the following components: systematic policies and procedures, maintenance programs, decision models, lifecycle cost considerations, funding mechanisms, along with financial projections and analysis" (Bibona, Fleet Financials, January/February, 2003). "Despite

their intentions, it is not unusual for cities to exceed their replacement guidelines from time to time. For example, a comparison of the formal vehicle replacement criteria of King County, Washington with that of the county's actual vehicle replacement practices revealed that of the police vehicles meeting the stated replacement plan criteria in 2005, only seventy-three percent were actually replaced. In many local governments, as in King County, vehicle replacement policies are guidelines or declarations of intent rather than rigid rules" (Ammons, Municipal Benchmarks, p. 158).

In the course of this research, it was clear that, in many instances where communities have been successful, criteria was established and all vehicles were subject to the same type of rating system with factors based on their type of use. "Developing vehicle replacement criteria establishes the foundation for a planned approach to fleet replacement and can use one of two primary methods for establishing vehicle replacement cycles" (Brown, 2013, Fire Apparatus and Emergency Equipment, p. 3).

"The empirical method involves using a formal life-cycle cost analysis technique (such as equivalent annual costs) to calculate the least costly life cycle per class of vehicle. The best practice method involves surveying peer organizations with similar fleet and operating condition" (Brown, 2013, Fire Apparatus and Emergency Equipment, p. 3).

"Regardless of which method your department uses, life cycles must be developed with the goal of minimizing overall fleet cost, maximizing vehicle availability, and providing end users with safe and reliable vehicles to perform their jobs.

Using either method, many agencies have developed a weighted point system that mixes the factors listed above in a formal reporting and review process. The advantage to

this is that it removes most of the politics and emotions out of the replacement process while providing the facts that all the stakeholders (end users, management, fleet staff, finance staff, and so on) understand to buy into the program. A variety of software systems and various point system programs are used by many fleet agencies across the country. Some are based on an overall replacement program using an average, while others customize the program to fit different classes or types of equipment. The point system is the most widespread methodology" (Brown, 2013, Fire Apparatus and Emergency Equipment, p. 3).

Several point based scoring systems were discovered as part of this research. All focused on age, miles/hours, usage, type of service, reliability, condition, and repair costs. Based on the points identified in the American Public Works Association (APWA) Vehicle Replacement Guide, points would typically coincide with four conditions: excellent, good, qualifies for replacement, needs immediate consideration. The APWA weighted point system is widely used and was the leading example in a study conducted by the University of Tennessee for the Tennessee Municipal League. The City of Tulsa uses points criteria referred to as the Fleet Utilization Scoring System or "FUSS". In reviewing best practices, cities with a plan and criteria had a better control of fleet management. The benefit of criteria is that it should be consistent throughout the fleet. Vehicles that scored marginally on any of these point systems could be put into a lesser demand role in a department that does not require vehicles that are part of an emergency response. This would allow for maximum usage before expensive repairs or the retirement of the vehicle.

Part of this research was to determine if a replacement plan would allow for better budgeting. A formal plan also accounts for all vehicles within the fleet. As cities struggle to budget for replacement of vehicles, they also must ensure that the fleet throughout the city is the appropriate size. In some cases, a phenomenon known as "fleet creep" begins. "Fleet creep is when equipment inventory slowly increases over time (creeps) even as employee staffing decreases" (Lester, Mark. Blue Collar Fleet Management p. 10). Once a full inventory of vehicles is completed for the entire fleet and data is put together on those vehicles, forecasting for vehicles becomes much simpler. The City of Prince George, British Columbia developed a fleet replacement plan in July of 2014. "The best fleet replacement plans are of no value without the annual funding required to implement them" (Annex C, Fleet Replacement Plan, City of Prince George, Mercury Associates, 2014, p. 4). A twenty-year replacement plan with peaks and valleys that differ annually by millions of dollars can have direct impact on a city. "If we knew our annual replacement costs we could then budget for those replacement funds if and when we can find funding" (R. Strauser, personal communications, November 1, 2016). In the Prince George Vehicle Replacement Plan, an "analysis was done to create a "smoothed" replacement plan by modifying the initial replacement dates of many individual assets in the fleet. While there are still some "peaks and valleys" in a smoothed replacement plan, it is more consistent in the early years of the plan" (Annex C, Fleet Replacement Plan, City of Prince George, Mercury Associates, 2014, p. 19). "Cities prefer known consistencies in budget planning" (M. Germ, personal communications, December 2, 2016). A smooth funding replacement plan keeps annual costs to a predetermined level.

With the city facing the possibilities of potentially no longer being able to make large cash purchases for larger specialty vehicles, alternative-financing solutions were investigated. The City of Wickliffe has traditionally purchased vehicles with cash. Funds were abundant and zero debt was great for planning purposes. Alternatives were never explored because they were not needed. For the city, traditional lease purchase or turn in lease programs would be available for a limited number of vehicles. Most vehicles within the city are work specific to serve a certain function in the performance of an individual or department. "The ability to purchase a vehicle for cash and then utilize that vehicle for as many as ten to twelve years optimizes the use for both its primary and then later secondary use. In some cases, fire vehicles can be part of the fleet for up to twenty-five years. Knowing the predicted path a vehicle will take in the fleet before being purchased, helps to determine alternative purchasing options" (C. Grossman, personal communications, October 6, 2016). The City of Boise identified several forms of purchasing vehicles including a sinking fund and cash back system, outright purchases with cash, and debt financing and leasing (City of Boise, Fleet Management Program Strategic Plan, 2014).

Repair costs to older vehicles are significant and sometimes can be more than the cost of financing or leasing a new vehicle over an extended period. Maria Neve, who is a government fleet manager for Merchants Fleet Management, states in an article written by Paul Clinton, "The cost of funds is so low that it makes sense to lease vehicles to replace older units that require significant maintenance, and the cost savings can be greater than the interest paid" (Clinton, Government Fleet, January 2016).

In general, John R. Hill who is a budgeting consultant for First Bankers explains that there are three types of leases in an article written for Fire Rescue 1 News.

Lease purchase

This type of agreement is very similar to a loan. The lessee makes payments and owns the truck after completing the payment schedule. The lessee does not have to pay any buyout fees or payments at the end. The truck is usually titled in the department's name from the beginning. This type of agreement qualifies for low, tax-exempt interest rates and terms usually three to fifteen years. Payments can be made monthly, quarterly, twice a year, or once a year. Most departments place a down payment to lower their costs, but a down payment is usually not necessary. The reason this option is called a lease purchase rather than a loan is that the lessee has a choice each year to cancel the agreement. By having this choice, most states consider this financing option an operating expense and it does not count towards debt limits. However, when the lessee chooses to cancel the agreement, the lessee then returns the truck to the bank. This option works well for departments that want to own the truck longer than the financing period. For example, financing a truck will serve the department for fifteen to twenty years and it is paid off in ten years.

Walk-away lease

A walk-away lease is more complex. It allows the lessee to use the truck for five to seven years while making payments. It is not necessarily designed for the lessee to own the truck; rather, it is designed to allow the lessee to use the truck for a set period of time at a set payment. At the end of the term, the lessee has the option to return or walk-away from the payment and truck, purchase the truck for a set amount, or continue

making payments until it is paid off. If the lessee walks-away, the lessee is responsible for the maintenance, repair and condition of the truck according to the terms agreed upfront. The lessee will usually be liable for any costs to bring the truck up to conditions.

Turn-in lease

The turn-in lease is similar to a walk-away lease with a couple of important differences. Like the walk-away lease, this option is designed to allow use rather than ownership of the truck. The difference comes at the end of the financing term, usually five or seven years. At that point, the choice is either to turn in the truck to the manufacture and receive a new truck or purchase the truck for a set amount, which was agreed upon upfront. When the lessee turns in the truck, they are responsible for the repair, maintenance and condition of the truck and may pay costs to bring the truck up to spec.

One of the leading manufactures of fire apparatus uses the following matrix in advertising to show some of these leasing options.

Table #2

Budget Year	Cash Purchase	Lease Purchase	Turn-In Lease
Year One	$500,000	$0	$0
Year Two	$0	$80,616	$60,650
Year Three	$0	$80,616	$60,650
Year Four	$0	$80,616	$60,650
Year Five	$0	$80,616	$60,650
Year Six	$0	$80,616	$60,650
Year Seven	$0	$80,616	$60,650
Year Eight	$0	$80,616	$60,650
Total:	$500,000	$564,312	$424,550
Pierce Financial Solutions for informational purposes only			

Grants

Grants are another possible source of vehicle replacement for the fire service. The Assistance to Firefighters Grant (AFG) is a competitive grant program sponsored and funded through the Federal Emergency Management Agency (FEMA). The Wickliffe Fire Department has had success in receiving grant awards through this grant program but has never applied for a piece of apparatus. In past years, these grants have assisted the city due to the ability to utilize funding that was provided by FEMA so that other departments can purchase vehicles with funding that would have been allocated to the fire department for equipment. Grants may be sought for vehicle replacement through the AFG in the future.

PROCEDURES

This research project utilized several methods in investigating the current problem. In order to accurately reflect needs across the city, a criteria scoring model was established for the purpose of determining if a vehicle needed replacement. The procedures used not only included an internal review of city vehicles but also those of neighboring and regional cities and some communities throughout the State of Ohio to look at best or similar practices. All were solicited via phone or actual personal interviews.

Establishment of Criteria

A matrix was established of all vehicles within the city that included type of vehicle, city department, year purchased, year anticipated for replacement based on past practices, and the anticipated replacement cost in the purchase year (Appendix 1). Other

city departments did not have a long-term plan. During the interviews, average length of use was established to fill in the matrix based on past practices. The replacement cost estimate at the end of the vehicle life was not available and somewhat troubling for some vehicles in other departments. Due to the inability to compare between departments, the replacement cost portion of the matrix was deleted. A scoring tool or worksheet was developed to evaluate all vehicles in consideration for replacement. This tool is generic and will be utilized by departments across the city. It was first developed by the American Public Works Association (APWA) and known as the Vehicle Replacement Guide (Appendix 2).

Internal Evaluation

Once the American Public Works Association tool was developed and modified for local use, each Administrator was contacted from all City Departments and asked if someone in their organization would be willing to use the scoring tool or worksheet to assess that department's fleet. The concern of educating individual department liaisons to utilize the scoring tool raised some concerns that it would be difficult for those individuals to remained unbiased in favor of their own department. Through the research process, the Assistant Service Director for the city had been called upon to provide research data. Mr. Ron Strauser had served as the city's lead mechanic for over twenty years prior to being recently promoted. He still had a unique knowledge of most of the city's entire fleet and oversees the daily duties of the fleet mechanics. It was decided to have him rate and review all vehicles as part of the survey. He was educated on how to use the tool and it appeared that there was no bias present as to how he rated the vehicles.

Telephone or Personal Interview Survey

A survey of eight questions (Appendix 3) was developed to solicit information on other communities purchasing practices and decision-making with respect to vehicle replacement within their municipalities. The intentions of this survey were to gather data of ongoing practices in other communities that may further this research project. The intent was to solicit information from twenty to thirty cities or townships. Most of those solicitations were conducted in northeast Ohio where the City of Wickliffe is located. A few were conducted across the State of Ohio to ensure a broader representation of data.

Data Collection

Data collection for this research was conducted both internally and externally. Internally, it is important to access information of the entire vehicle fleet for the City of Wickliffe. While the city departments are aware of all the vehicles they own, there is no one single data source that has the information needed for this research. The matrix for the internal data includes department assigned, vehicle number, year purchased, type of vehicle, anticipated useful life years anticipated replacement year (Appendix 1). The purpose of the information was to look at all vehicles in need of replacement for the entire city in one document. Once the document was formulated, it was used for determining the need to replace a vehicle and was applied to every vehicle in the city (Appendix 2). Externally, data was collected utilizing both telephone and personal interviews. A survey of eight questions was developed to solicit information on the purchasing practices and decision-making with respect to vehicle replacement within other municipalities (Appendix 3). The intention of the survey was to gather data about

ongoing practices in other communities that may further this research project. Communities surveyed were surrounding area communities in northeast Ohio and some other communities throughout the state. It was anticipated the survey would be completed by twenty to thirty communities. While the size of the community may have some impact, the research was looking to find best practices. Dependant on the outcome, the thought was that best practices typically could be applied to almost any city at an appropriate scale. Due to professional considerations, contact was made initially with other communities via their local fire chief or knowledgeable fire officer. It is anticipated that the chief or his/her officers would be knowledgeable of city vehicle replacement practices. If for some reason, the survey questions cannot be answered by the fire chief or officer, the surveyor asked for a reference to the best or most knowledgeable person to answer the questions for that community.

Definition of Terms

Capital Fund

This is funding that has been set-a-side or earmarked for particular larger scale purchases within a community. These purchases would include infrastructure repairs or additions, vehicles, building repairs or additions or any larger scale purchases expected to last for a pre-determined number of years and budgeted with funds that are not part of the general operating budget for that community.

City Charter

In Ohio, municipal corporations have certain powers granted to them in Article XVIII of the Ohio Constitution that exist outside authority found in the Revised Code. These powers, granted by the Constitution and known as "home rule" powers, include

the power of local self-government, the exercise of certain police powers, and the ownership and operation of public utilities. This enables the community to set local rules or ordinances on how they want their community governed and then set standards on how those roles shall be filled and listing certain responsibilities. This includes how a municipality establishes a budget for funding community needs in accordance with State guidelines.

Debt Financing

A method of financing in which a company (or in this case a city) receives a loan and gives a promise to repay the loan.

Empirical Method

A system utilized for vehicle replacement budgeting that takes into consideration the entire costs of the vehicle through the projected period of ownership.

Fleet

A group of vehicles owned by a specific agency rather than by an individual person. Typically, in these situations a fleet is all vehicles within a city and not those of just one individual department in the city.

General Fund

In public sector accounting, the general fund is the primary fund of a community or government agency. It records all revenues and expenditures of the community or government agency as it receives funding and pays for expenses.

Income Tax

A tax levied by a government directly on income, especially an annual tax on personal income.

Leasing

A vehicle lease is a method of obtaining a new vehicle that involves only paying for a portion of the vehicle's actual cost as opposed to having to pay for the vehicle in its entirety. The lease is set for a pre-determined amount of time and at the end of that time the buyer or lessee has options to turn the vehicle back in or purchase the vehicle for an additional cost.

Life Cycle Cost Analysis

The overall estimated cost for a particular vehicle, including the total costs for: depreciation, fuel, maintenance and repairs, purchasing and financing a vehicle over an estimated useful term, based upon mileage or age of vehicle.

Local Revenue Sharing

The State shares part of their general tax revenues back to a city in the form of funds, which are part of a local community's revenues. It is called the Local Government Fund and it was reduced to municipalities by the State of Ohio in 2013 by fifty percent.

Outright purchase

Purchasing something in its entirety with no loan or lease.

Property Tax

An appraised tax on a piece of property and paid to the county. The county Auditor then distributes this tax revenue to the parties that have claim to a portion of the tax.

Sinking Fund

A fund established by an economic entity (city) by setting aside revenue over a period to fund a future capital expense, or repayment of a long-term debt.

Smoothed Vehicle Replacement Plan

A funding mechanism for a city during replacing city assets such as vehicles. The goal is to direct approximately the same annual funding towards vehicle replacement to ensure annual costs do not rise or decrease above or below the expected levels. The smoothed plan keeps the budget smooth and prevents peaks and valleys.

Weighted Point System

In the case of determining replacement criteria for vehicles, a weighted point system allows for an unbiased approach to scoring or determining "points" towards which vehicles will need priority for replacement.

Limitations of the Study

It would be expected that if the scoring tool is used individually by each department that those department vehicles may be scored differently than if only one unbiased person was scoring all vehicles throughout the city. For this reason, it was decided that only one person would be used to score or rate all the vehicles. It is assumed that all persons contacted as part of the survey provide truthful information during interviews.

RESULTS

The research that was conducted had some enlightening results from other departments in the region and across the State. In the process of conducting this research, needed information of the city fleet was obtained and compiled for the first time. While

all vehicles within the City of Wickliffe were evaluated, all road vehicles were evaluated against each other by using criteria that was found for this research project. Vehicles such as excavators, backhoes, and sidewalk plow vehicles and other similar off-road equipment were not evaluated. It was determined that in trying to maintain some consistency, those vehicles were considered specialty vehicles that may not be used for several months at a time. It was recognized that they would eventually have to be evaluated for cost replacement, as they are all expensive pieces of equipment that may have a lengthy life span but ultimately will need to be replaced sometime in the future.

The following fire departments were contacted as part of the research. In questions referring to the entire city or township, those departments that were fire districts had knowledge of what the other non-fire related departments practices were in those multiple communities that were part of their fire district.

Table #3

Solon Fire Department	Painesville City Fire Department
Painesville Township Fire Department	Mentor Fire Department
Kirtland Fire Department	Willoughby Hills Fire Department
Willoughby Fire Department	Bedford Heights Fire Department
Chester Township Fire Rescue	Granville Township Fire Department
Jerome Township Fire Department	Kent Fire Department
Fairlawn Fire Department	Sylvania Township Fire Department
Lancaster Fire Department	Wooster Fire Department
Blue Ash Fire Department	Sydney Fire and Emergency Services
Canton Township Fire Department	Van Wert Fire Department

Fairfield Fire Department	Springfield Township Fire District
Clearcreek Fire District	Cuyahoga Falls Fire Department
Lyndhurst Fire Department	Bellevue Fire Department
Eastlake Fire Department	Perry Joint Fire District
Concord Township Fire Department	Cambridge Fire Department
Euclid Fire Department	Geneva Fire Department

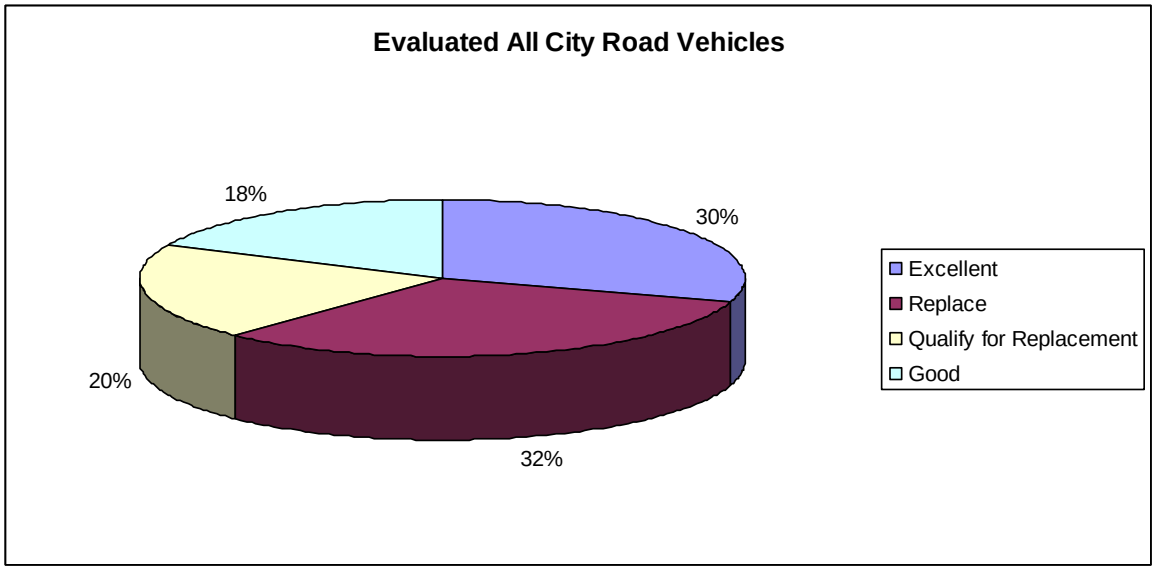
Research question one was as follows: What factors are currently used by the City of Wickliffe to determine the need for a vehicle to be replaced or repurposed? There is currently no plan or factors that are specific to when a vehicle should be replaced. Each department has their own ideas when a vehicle should be replaced but ultimately funding plays a role (R. Strauser, personal communications, November 1, 2016). Until this research was established, the only listing of the entire city fleet was based off a fuel consumption print out.

Research question two was as follows: How would a fleet replacement plan across the entire city allow for maximization of vehicle use? Research was conducted by interviewing thirty-two fire chiefs or fire officers throughout the State. In discussing the specific questions with these chiefs or officers, it was apparent that cities with fleet managers or a system in place of tracking vehicles throughout the entire city or township had more success than those that did not. "The fleet manager for the City of Solon does a great job in maximizing vehicle life and anticipates vehicle life spans for all departments (W. Shaw, personal communications, November 16, 2017). Ten of the thirty-two communities had a municipal wide replacement plan. Those communities with fleet

replacement plans were able to track conditions on vehicles to make an educated and predictive decision of when to replace vehicles.

The scoring tool or matrix in Appendix 2 was used for all on road vehicles in the City of Wickliffe to identify which vehicles should be considered for replacement. The scoring tool used parameters that could be found across all city departments in an effort to obtain consistency. Sixty-five out of seventy-nine total vehicles were evaluated using this tool. Fourteen Public Works vehicles were not evaluated because they were considered specialty off road vehicles or machines and had no consistency with other road vehicles. The tool was utilized by the former head city mechanic who now is the Assistant Director of Public Works. He has first hand knowledge of every vehicle in the city and used the tool after instruction was provided to him on specific categories of the tool.

Figure #2

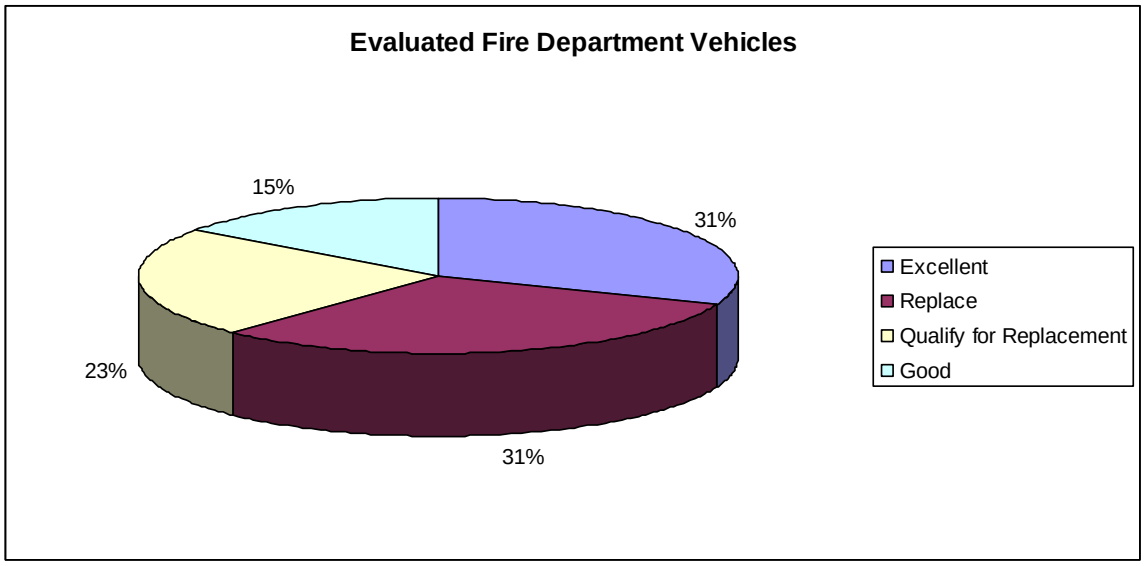


An estimated cost to replace vehicles that were identified as "replace," which represented thirty-two percent of the vehicles surveyed, and "qualify for replacement" which represented twenty percent of the vehicles surveyed, was calculated using actual

replacement values for 2017 based on the State of Ohio group procurement costs. The replacement cost of those thirty-five vehicles was calculated at approximately $4,045,000. Those costs reflect purchasing through a statewide cooperative that allows for significant savings on a vehicle purchases. At this time, there is no mechanism in place for funding within the City of Wickliffe that would allow the city to purchase these vehicles (City of Wickliffe Budget, 2016). The data that was obtained for this research will allow and provide for additional research to determine priorities for funding. Without this research, it is doubtful a vehicle replacement plan could be initiated without the knowledge of need and cost.

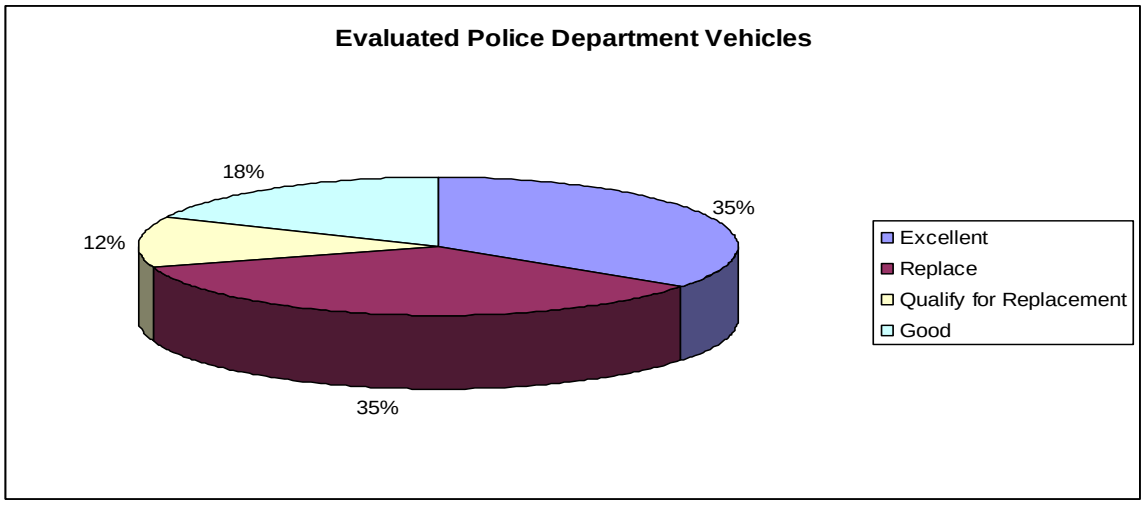
The following graphs indicate Appendix 2's scoring tool by individual departments.

Figure #3



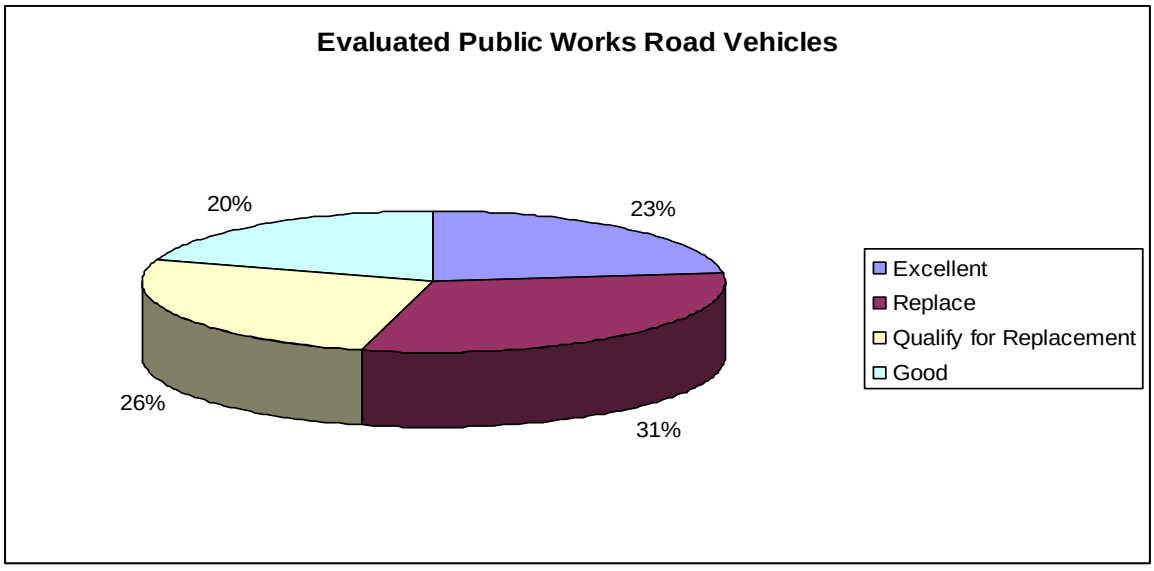
The fire department's replacement cost for those vehicles scoring in the "replace" or "qualify for replacement" categories is approximately $2,480,000 and represents seven of the thirteen vehicles scored for that department. This includes two engines, one ladder truck and two of the three ambulances.

Figure #4



The police department's replacement cost for those vehicles scoring in the "replace" or "qualify for replacement" categories is approximately $340,000 and represents eight of the seventeen vehicles scored for that department. Three of the eight vehicles that met the requirements were unmarked cars for the detective bureau. The bureau has value in cars for undercover work and therefore will sometimes look to keep older cars at their disposal for specific surveillance reasons.

Figure #5



The public works department's replacement cost for those vehicles scoring in the "replace" or "qualify for replacement" categories is approximately $905,000 and represents twenty of the thirty-five vehicles scored for that department.

Research question three was as follows: How could a fleet replacement plan allow for budgeting of annual vehicle replacement costs? The research that has been established as part of this project identifies which vehicles meet some form of a specific need whether immediate or qualifying for replacement. The tool that was used was an independent scoring tool (Appendix 2) and applied to most of the vehicles in the city. If the municipality does not know what needs to be replaced, then they cannot put a cost to those replacements. Once a cost is established, budgeting will play a process as to what and when vehicles are replaced. Several departments within the city could not predict the cost of vehicles at the end of their life cycles but this needs to be done whether through education or experiences so that a budget can be formulated as to the annual cost of replacing vehicles. Formulating an annual cost to replace vehicles may also spur a tax initiative in the form of a levy to generate revenue to address the problem. While not specifically asked as part of the interview process, several departments indicated that they had a capital improvements levy for the specific purposes of replacing vehicles within their department.

Research question four was as follows: What are alternative funding models for the purchase of vehicles instead of a traditional cash purchase? Almost twenty-two percent of the departments interviewed indicated that they no longer or never purchased a vehicle using cash. These departments use lease options or simple loans from the local community's bank. Chief Deeks of the Cambridge Fire Department stated, "We go down

to the local bank and take out a loan similar to a car loan" (J. Deeks, personal communications, November 16, 2017). Many cities across the country are looking to lease a percentage of their vehicles. Those communities that are leasing are realizing a cost savings in maintenance and having the ability to provide their employees safe and dependable vehicles on a regular and planned basis.

The external survey that was used can be found in Appendix 3. Seventy-two percent of the departments surveyed have a department fleet replacement plan. The interviewer had asked if the municipality had a fleet replacement plan of some form. Thirty-one percent of the communities surveyed had a fleet replacement plan and thirty-four percent did not have a citywide plan. It was interesting that thirty-five percent of the fire chiefs or officers were unaware if the entire municipality had a plan. This was interesting because it was determined that in most cases, the fire department and other municipal departments compete for the same funding streams. When it came to factors of when to replace a fire apparatus, all (100%) of the fire chiefs or officers indicated that age was part of that process. Repair cost and mileage also played a significant role in vehicle replacement with most departments. Twenty-eight percent indicated that replacement cost was a factor as whether to replace or continue to repair a vehicle. Less than one percent indicated or referred to the National Fire Protection Administration with reference to replacing or retiring vehicles. When asked as to what factors are used throughout the municipality the response was consistent with the question referencing if the municipality had a fleet replacement plan. Thirty-Four percent indicated that factors were consistent across the municipality. Thirty-seven percent indicated that there were no consistent factors and twenty-nine percent indicated that they did not know if there were

factors through the municipality. The final determination of who makes the decision of when or if a vehicle will be replaced was the most consistent response. All departments indicated that the Chief makes the recommendation that ultimately needs to be approved by the City Council, Township Trustees or District Board. When asked if the community had a specific fund for vehicle replacement, seventy-two percent indicated they had a funding source established. It was noteworthy of the nine departments that did not have a source, several had indicated that up to a few years ago, a source existed and that source had been re-appropriated to maintain services. Fifty percent of the departments have a system of setting aside or planning for large purchases in advance of that purchase. Seventy-five percent of the departments surveyed still purchase vehicles using cash but several had indicated that might be changing in the near future.

The inability to afford new vehicles is the reason for this research. A correlation was developed in looking at cost with respect to other city vehicles. One reason this was researched was based on the misconception that police patrol cars are inexpensive as opposed to fire apparatus. In the City of Wickliffe, a new police patrol car costs approximately $50,000. That includes the vehicle, emergency warning system, computer and video/audio recording devices. In some cases, vehicle equipment can be moved from an old vehicle to another but it depends if the vehicles are similar with respect to size, fit, and the condition of the older equipment. These vehicles last for at best, three years (R. Ice, personal communications, November 1, 2016). Based on current costs over a twenty-four year span this one police vehicle will cost approximately $400,000. A fire engine in the City of Wickliffe may cost approximately $500,000 over that same time. The city currently maintains nine marked patrol cars in the police department. The fire

department's principal vehicles are two engines, one ladder truck and three medic ambulances. The concern is not if they are needed as part of public safety but the idea that fire apparatus is excessively expensive compared to a police vehicle. If a person looks at long-term expenses between police and fire vehicles, they will find that fire apparatus are not as expensive as initially thought. In the course of a twenty-four year time span, nine marked patrol units will cost approximately $3,600,000 and the fire department's fire and EMS apparatus will cost $2,150,750 based on 2017 costs. Fire apparatus is much costlier with respect to initial purchase but over a course of twenty-four years, it is more cost efficient for mission critical vehicles in the City of Wickliffe.

DISCUSSION

The City of Wickliffe and many other municipalities in the State of Ohio and across the country continue to regain financial stability from the recession of 2007-2009. In 2013, the State of Ohio in an attempt to reduce their deficit spending reduced a program of sharing revenue with municipalities by fifty percent along with the elimination of the estate tax. This affected communities like Wickliffe as they continued to provide the same level of services with less revenue. This reduction and elimination of revenue to the City of Wickliffe incurred a loss of revenue of well over one million dollars (City of Wickliffe, Budget 2013). To offset this loss of revenue, the City went to the voters twice to eventually eliminate the capital improvement fund to cover their loss in revenue. The voters approved these changes to the Charter. The changes eliminated a capital fund, which provided funds for purchasing vehicles and improving infrastructure around the city. Those funds were allowed to be directed towards operating expenses. In

addition to revenue decreases, labor and hospitalization costs continued to climb. This is best illustrated by the fact that the 2010 general fund budget and the 2017 general fund budget are within $28,057 as noted in the following chart. This was done through attrition and only one layoff. The deviation in 2011 was a result of the city receiving a significant increase in payroll taxes because of the largest employer/business in the city being sold. The selling of the company forced all employees with stock in the company to sell that stock. The selling of those stocks resulted in employees having to pay a payroll tax to the city.

Table #4

2010	$13,467,850
2011	$16,029,268
2012	$12,751,736
2013	$13,000,000
2014	$11,860,130
2015	$12,611,259
2016	$13,289,118
2017	$13,495,907

Source: City of Wickliffe Annual General Fund Budget 2010-2017

The emphasis in any community is to provide services to the community. It takes vehicles for personnel to provide those services and without personnel, those vehicles would be idle. The general thought process was to keep vehicles on the road via repairs and reduce purchasing vehicles unless absolutely necessary. The program of setting funds

aside for future purchases was eliminated with that funding going to pay for personnel/labor costs.

This research shows that there is no plan for future vehicle replacement that is data based. Best practices were recognized in literature reviews and personal interviews. Those communities that invest in the time and accountability of an entire fleet have a better idea of cost and most importantly, future costs. The developed vehicle rating/scoring tool was of interest to several department heads and a tool that will most likely be utilized in the future. The funding that is entrusted to us by the taxpayers is more accountable then ever and the public (by way of their Councilpersons) should be given pertinent data to make educated decisions. In many cases, as interviews were conducted, some discussion revolved around older vehicles that require more vehicle maintenance but still provide service even with an increased out of service time. If personnel have to be reduced in order to purchase vehicles then no service can be delivered.

Additional analytics need to be compiled along with evaluations of the number of vehicles within each department. In some cases, vehicles can be purged from the system. With a reduced work force, some vehicles are no longer needed. "Fleet creep is when equipment inventory slowly increases over time (creeps) even as employee staffing decreases" (Lester, Mark. Blue Collar Fleet Management pg. 10). Analytics will help make some of those decisions on what and how many vehicles should be replaced based on maintenance, use and several other factors up to and including fleet insurance costs. The need to attempt to make accurate cost replacement predictions of vehicles will allow for budgeting of a new replacement vehicle at the end of that vehicle's life cycle. The

immediate concern is that across the three major departments in the city there is $2,855,000 worth of vehicles that are rated as "needs immediate consideration for replacement."

Revenue for vehicle replacement needs to be established to fix the problem before it becomes worse. Revenue can come in many forms including alternative funding solutions that do not involve initial purchases using cash. Planning will also play an important part of vehicle replacement. Someone needs to be empowered to look at the entire citywide fleet and make determinations when purchases should be made and how a vehicle will stay in the fleet or be repurposed to other departments that do not require high performance from newer vehicles. Solutions to problems such as this are not easy but through research and planning, more informed decisions could be made to solve the problem.

RECOMMENDATIONS

It is recommended that the following items be considered to have pertinent data to make recommendations for the funding of vehicle replacement.

1. Establish a citywide database of all vehicles which includes out of service time, tracking of repairs and parts and any other information that can be tracked relating to each vehicle.
2. Adapt a rating tool to determine when a vehicle should be considered for replacement.
3. Empower a fleet manager to work with department supervisors to eliminate vehicles that are no longer productive or serve their purpose.

4. Develop a matrix of all city vehicles to include type of vehicle, intended use, possible repurposing, predicted replacement date or year along with anticipated replacement cost. It is understood that predicting the replacement cost of a new fire engine twenty to twenty-five years in the future is an educated guest. It is recognized that these costs may have to be updated every few years to maintain accuracy to the database especially in the last five to eight years of a vehicle's life. This would allow for a more accurate estimate of the replacement costs as opposed from one that may have been made twenty-five years ago.
5. Work to find purchasing alternatives that do not involve an initial cash payment for the initial purchase. Several leasing tools can be favorable over a short term.

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APPENDIX 1 – CITY VEHICLE INVENTORY

Fire Department

Unit #	Purchased	Vehicle	Replacement Point Scale	Color Code Scale	Useful Life Years	Replacement Year
1513	1996	Engine	36	Red	22	2018
1514	2006	Engine	24	Yellow	22	2028
1519	1999	Aerial	30	Red	24	2023
1512	2012	Ambulance	18	Green	18	2030
1522	2008	Ambulance	25	Yellow	18	2026
1532	2001	Ambulance	36	Red	18	2019
1511	2012	4WD SUV	13	Blue	12	2024
1521	2006	Sedan	28	Red	10	2016
1531	2005	4WD SUV	27	Yellow	12	2017
1541	2004	Sedan	22	Green	12	2016
1500	2014	4WD SUV	11	Blue	12	2026
1517	2012	4WD SUV Pick Up	11	Blue	12	2024
1577	2008	Haz Mat	17	Blue	30	2038

0 - 17 points	Excellent	Blue
18 - 22 points	Good	Green
23 - 27 points	Qualifies for Replacement	Yellow
28 and above	Needs Immediate Consideration	Red

APPENDIX 1 – CITY VEHICLE INVENTORY

Police Department

Unit #	Purchased	Vehicle	Replacement Point Scale	Color Code Scale	Useful Life Years	Replacement Year
750	2015	4WD SUV	11	Blue	10	2025
751	2016	Sedan Unmarked	7	Blue	8	2024
752	2009	Sedan Unmarked	31	Red	8	2017
753	2010	Sedan Unmarked	18	Green	8	2018
754	2016	4WD SUV	15	Blue	2-3	2019
755	2014	Sedan	31	Red	2-3	2017
756	2015	4WD SUV	27	Yellow	2-3	2018
757	2013	Sedan	34	Red	2-3	2016
758	2015	4WD SUV	30	Red	2-3	2018
759	2014	4WD SUV	24	Yellow	2-3	2017
760	2010	4WD SUV	18	Green	5-6	2016
763	2011	SWAT Van	13	Blue	12	2023
764	2014	4WD SUV	18	Green	2-3	2017
765	2013	4WD SUV	28	Red	2-3	2016
766	2010	Sedan Unmarked	16	Blue	8	2018
767	2003	SUV Unmarked	35	Red	8	2011
MC-1	2010	Motorcycle	21	Green	12	2022

0 - 17 points	Excellent	Blue
18 - 22 points	Good	Green
23 - 27 points	Qualifies for Replacement	Yellow
28 and above	Needs Immediate Consideration	Red

APPENDIX 1 – CITY VEHICLE INVENTORY

Public Works

Unit #	Purchased	Vehicle	Replacement Point Scale	Color Code Scale	Useful Life Years	Replacement Year
1	2010	4WD SUV	28	Red	Repurposed	
3	2013	Sedan	14	Blue	8	2021
5	2015	Pick Up 2500	9	Blue	10	2025
6	2009	Pick Up 2500	21	Green	10	2019
7	2004	Pick Up 2500	33	Red	10	2014
8	2009	Pick Up 2500	22	Green	10	2019
9	2009	Pick Up 2500	21	Green	10	2019
10	2011	1 Ton Dump	20	Green	10	2021
11	2014	1 Ton Dump	14	Blue	10	2024
12	2003	1 Ton Dump	37	Red	10	2013
13	2014	2 1/2 Ton Dump	12	Blue	10	2024
14	2004	2 1/2 Ton Dump	38	Red	10	2014
15	2007	2 1/2 Ton Dump	32	Red	10	2017
16	2016	2 1/2 Ton Dump	37	Red	10	2026
17	2010	2 1/2 Ton Dump	23	Yellow	10	2020
18	2015	2 1/2 Ton Dump	11	Blue	10	2025
19	2013	Sewer Jet	16	Blue	12	2025
20	2010	Vacuum Truck	19	Green	20	2030
22	2009	Street Sweeper	Not Rated			

APPENDIX 1 – CITY VEHICLE INVENTORY

Public Works (continued)

Unit #	Purchased	Vehicle	Replacement Point Scale	Color Code Scale	Useful Life Years	Replacement Year
23	2006	Loader	Not Rated			
24	2000		Not Rated			
25	1976	Tractor	Not Rated			
26	1981	Tractor	Not Rated			
28	1999	Sidewalk Plow	Not rated			
29	1999	Sidewalk Plow	Not rated			
30	1997	Backhoe	Not rated			
31	2007	Loader	Not Rated			
32	1992	Brush Chipper	Not Rated			
33	2011	Excavator	Not Rated			
34	2004	SUV	40	Red	Repurposed	
35	2010	Sedan	26	Yellow	Repurposed	
36	2011	Sedan	26	Yellow	Repurposed	
37	2008	Van	23	Yellow	Repurposed	
38	2004	Backhoe	Not Rated			
39	1998	Skid Steer Bobcat	Not Rated			
Trencher	2000	Bobcat Trencher	Not rated			
41	2001	Light Duty Pick Up	26	Yellow	12	2013
42	2000	1 Ton Dump	28	Red	12	2012

APPENDIX 1 – CITY VEHICLE INVENTORY

Public Works (continued)

Unit #	Purchased	Vehicle	Replacement Point Scale	Color Code Scale	Useful Life Years	Replacement Year
44	2006	Pick Up 2500	27	Yellow	10	216
45	2004	Boom Truck	20	Yellow	20	2024
46	1998	Traffic Van/Lift	35	Red	12	2010
47	2007	Traffic Van/Lift	24	Yellow	12	2019
48	1998	Sewer Van	29	Red	12	2010
103	2007	Sedan	29	Red	Repurposed	
104	2008	Sedan	26	Yellow	Repurposed	
105	2009	Pick Up 2500	22	Green	10	2019
Recreation #1	2014	16 Seat Bus	11	Blue	10	2024
Recreation #2	2009	16 Seat Bus	20	Green	10	2019
Mayor	2014	Sedan	11	Blue	11	2025

0 - 17 points	Excellent	Blue
18 - 22 points	Good	Green
23 - 27 points	Qualifies for Replacement	Yellow
28 and above	Needs Immediate Consideration	Red

APPENDIX 2
CITY SCORING/RATING TOOL FOR REPLACMENT OF VEHICLES

Date: Evaluator:

Department:

Vehicle Type: Vehicle Number: Year Purchased:

Factor	Score	Points
Age	_____	One point for every year of chronological age, based on in-service date.
Miles/Hours	_____	One point for each 10,000 miles or 1,000 engine hours of use.
Type of Service	_____	Points are assigned based on the type of service the unit is exposed to. For instance, fire engines or excavators would be given a five because it is classified as a severe duty piece of equipment. In contrast, an administrative sedan would be given a score of one.
Reliability	_____	Points are assigned to a one, three or five depending on the frequency that a vehicle is in the shop for repair. A five would be assigned to a vehicle in the shop two or more times per month on average, while a one would be assigned to a vehicle in the shop an average of once every three months or less.
Maintenance/ Repair Cost	_____	One to five points are assigned based on a total life maintenance and repair costs (not including repair of accident or damage).
Condition	_____	This category takes into consideration body condition, rust, interior condition, accident history, anticipated repairs, and so on. A scale of one to five points is used with five being poor condition
Total	____	

Scoring

0 - 17 points	Excellent	Blue
18 - 22 points	Good	Green
23 - 27 points	Qualifies for Replacement	Yellow
28 and above	Needs Immediate Consideration	Red

APPENDIX 3 – TELEPHONE/INTERVIEW SURVEY

The following questions were asked of other municipalities as it relates to vehicle fleet replacement.

1.) Does your individual department have a fleet replacement plan?

2.) Is there a citywide fleet replacement plan?

3.) What factors or criteria are used to consider a vehicle replacement?

4.) If you use factors or criteria are they standard across the city?

5.) Who makes the final determination of what vehicles are replaced?

6.) Does your city have a specific fund for vehicle replacement?

7.) Are large purchases of specialty vehicles planned for by setting aside funding for a future purchase?

8.) When your city makes a purchase, is the vehicle purchased using cash, loan, lease, lease to purchase, or other?