



Lake Junaluska Assembly  
Strategic Equipment Assessment  
Spring 2011

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In Partnership with Buddy Young, Gene McAbee  
and the Assembly Public Works Crew

*The mission of Lake Junaluska is:  
To be a place of Christian hospitality where lives are transformed through renewal  
of soul, mind and body.*

**Executive Summary:**

The purpose of this analysis is to strategically assess the equipment used by the Lake Junaluska Assembly Public Works department. This examination of condition, necessity, cost and expected lifetime will allow purchasing decisions to be made that make efficient and effective use of the Department's resources.

## Methodology:

This strategic equipment assessment is modeled after a municipal capital improvement plan (CIP) or capital purchasing plan (CPP). These short to medium range plans, typically three to ten years, identify capital expenses (such as equipment) provide a schedule plan and options for financing the plan. These plans allow for systematic evaluation, reduce potential borrowing costs and consolidate projects while ensuring an efficient use of public funds.

The analysis of equipment used by Lake Junaluska Assembly Public Works involved two stages, observation of the current state of equipment, collaborative judgment on the necessity, life expectancy, and pricing estimates for the cost of replacing the equipment.

During the first stage, each piece of existing equipment in the department was assigned to a particular member or members of the Public Works staff. The assignment of staff to particular pieces of equipment was done in consideration of their expertise with the equipment and their routine use of the equipment. During the second stage, the Public Works crew met repeatedly as a group to obtain five key pieces of information: the importance of the equipment, current condition, expected lifetime, replacement cost and current value. These criteria are explained below:

**Importance:** The necessity of the equipment in light of the needs of the Department in serving the Lake Junaluska Assembly. Equipment was graded on an “A” to “D” scale, with equipment graded as A being of the upmost importance to properly serving the Assembly and with equipment graded as “D” bearing little to no importance to the performance of routine tasks at the Assembly.

**Condition:** The current condition of the equipment as of Spring 2011. Equipment was graded on an “A” to “D” scale, with equipment graded as A being in near mint or fully functional condition and with equipment graded as “D” bearing little functionality or being in near exhausted condition.

**Lifetime:** The expected lifetimes of the equipment, taking into account any minor repairs or part replacements that would extend the life of the equipment.

**Replacement Cost:** The price, or price range, for a replacement for the piece of equipment. Any new replacement must at least perform the job as effectively as the old equipment, if not better than the old equipment. One such example of an increase in effectiveness might be a vehicle that achieves greater miles per gallon, lowering fuel costs.

**Funding Method:** Items marked as “Utilities” are primarily used by the Utilities departments (for example, water), these items are paid for through monthly utilities bills. Items marked as “Assessment” as those used departments paid for through the annual service charge or assessment (such as the streets department). Items marked as “Split” are used by all departments and thus the costs will be divided between the two funding methods.

## Analysis:

The table found below is a detailed listing of findings of Lake Junaluska Assembly Public Works.

Public Works Equipment Condition Assessment					
Equipment	Importance	Condition	Lifetime	Replacement Cost	Funding Method
99 Dodge*	A	D	0	\$ 12,500.00	Budgeted for 2011
Dodge Ice Truck	A	D	1	\$ 12,500.00	Assessment
Sewer Machine *	A	D	1	\$ 15,000.00	Utilities
Salt Machine	A	B	2	\$ 8,000.00	Assessment
Software	A	B	2	\$ 5,000.00	Assessment
Freight Liner	A	B	6	\$ 125,000.00	Utilities
Bob Cat	A	B	5	\$ 25,000.00	Split
Leaf Vacuum	A	A	5	\$ 24,000.00	Assessment
Back Hoe	A	A	10	\$ 22,000.00	Split
Trailer x 2	B	C	15	\$ 2,500.00	Split
Ford F150	B	B	5	\$ 10,000.00	Split
Track Hoe	B	B	5	\$ 35,000.00	Split
Big Dump	B	B	8	\$ 30,000.00	Split
New Dump	B	A	12	\$ 20,000.00	Split
Security Boat	B			\$ 1,250.00	Assessment
Ford Garbage	C	D	2	\$ 35,000.00	Utilities
Little Dump	C	C	5	\$ 20,000.00	Split
Golf Cart	B			\$ 3,000.00	Split
Ford 350	C	B	3	\$ 12,000.00	Split
Taurus	C	B	7	\$ 10,000.00	Assessment
Chipper	C	B	5	\$ 5,000.00	Assessment
Mower	C	B	8	\$ 15,000.00	Assessment
Roller	D	D	`1	Not to be replaced	N/A

**The estimated equipment value of Lake Junaluska Assembly Public Works is approximately \$465,250**, based on the values assessed to attain replacements for current equipment. The equipment and vehicles in the Public Works Department are typically used until broken; **thus the equipment retains negligible value at the end of its lifetime**. Their remaining value is the value the equipment can be sold for scrap. All equipment is purchased in “used” but “good” or “like new” condition in order to effectively use resources.

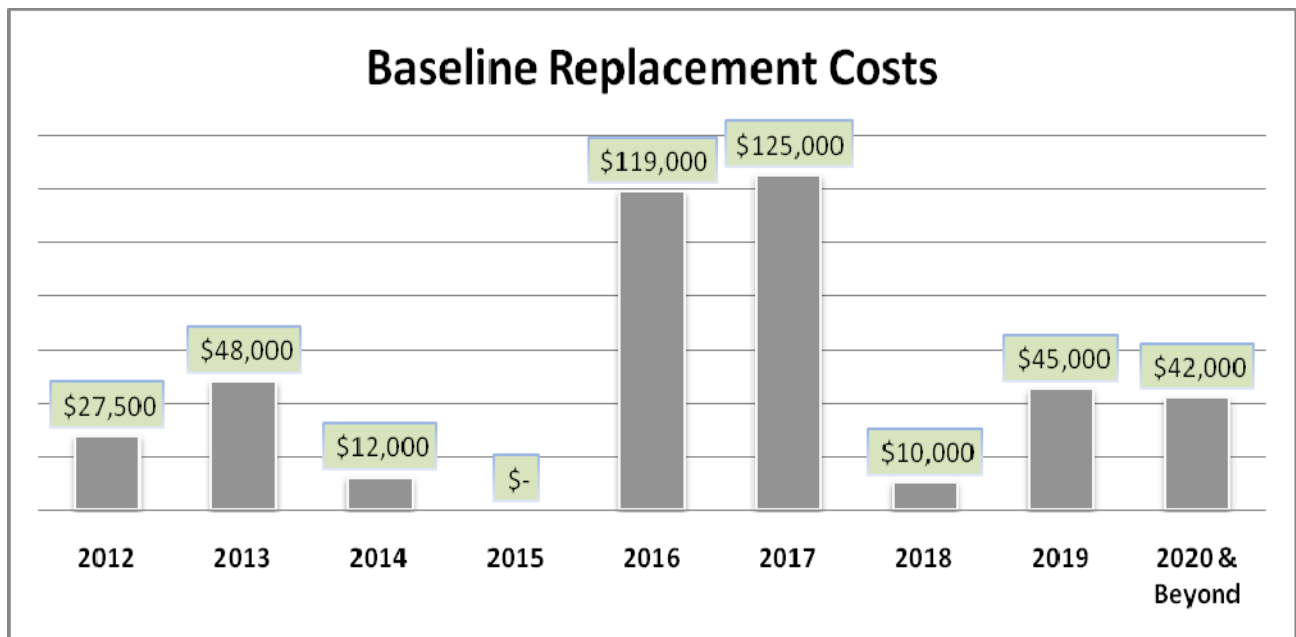
\*Footnote: Following the preparation of this report, in May 2011, the Town of Waynesville bought new sewer equipment and allowed us to purchase their old equipment at the discounted rate of \$15,000 through a mutual equipment sharing contract.

### Baseline Replacement Costs (without new or proactive purchases)

The following timeline illustrates when equipment will expire and the replacement cost in thousands (1000 = 1k). This graph does not include any proactive purchases of equipment or the purchase of any new equipment. Equipment is used until it is fully exhausted.

2012	2013	2014	2015	2016	2017	2018	2019	2020 & Beyond
Ice Truck (\$12.5k)	Salt Machine (\$8k)	Ford F350 (\$12k)		Bob Cat (\$25k)	Freightliner (\$125k)	Taurus (\$10k)	Big Dump (\$30k)	Back Hoe (\$22k)
Sewer Machine (\$15k)*	Software (\$5k)			Leaf Vacuum (\$24k)			Mower (\$15k)	New Dump (\$20k)
	Ford Garbage (\$35k)			Ford F150 (\$10k)				Trailer x2 (\$2.5k)
				Track Hoe (\$35k)				
				Little Dump (\$20k)				
				Chipper (\$5k)				

The graph below visually displays replacement costs over time as the equipment expires. This graph does not show any proactive purchase of equipment or the purchase of any new equipment. The high clustering of costs in 2016 and 2017 is apparent in this display.

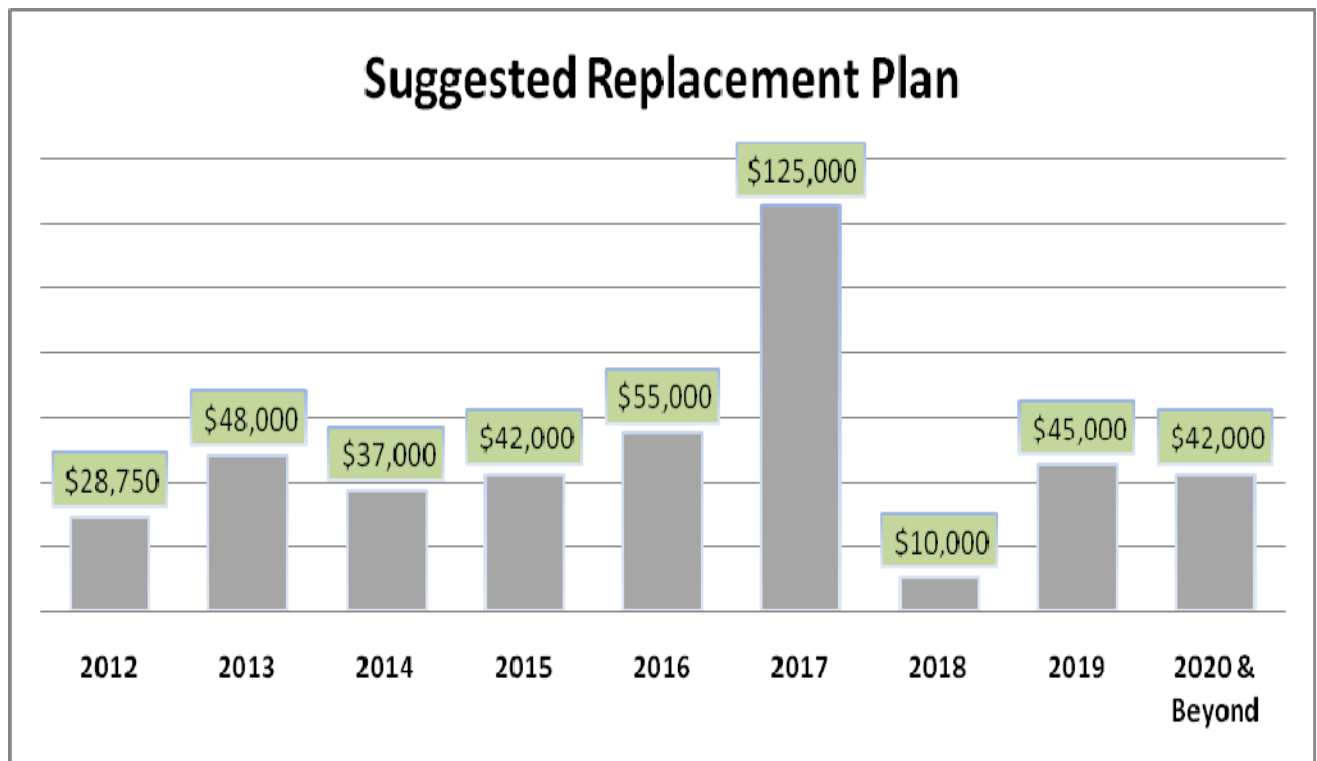


### Recommended Schedule for Equipment Purchases

The following table is the recommended schedule for purchase and replacement utilizing all of the key criteria (importance, condition, etc). It includes the proactive equipment purchasing and the purchase of new equipment. This schedule was developed in collaboration with the Public Works Crew and received group consent as a feasible schedule for purchasing.

2012	2013	2014	2015	2016	2017	2018	2019	2020 & Beyond
Ice Truck (\$12.5k)	Salt Machine (\$8k)	Ford F350 (\$12k)	Leaf Vacuum (\$24k)	Little Dump (\$20k)	Freightliner (\$125k)	Taurus (\$10k)	Big Dump (\$30k)	Back Hoe (\$22k)
Sewer Machine (\$15k)*	Software (\$5k)	Bob Cat (\$25k)	Chipper (\$5k)	Track Hoe (\$35k)			Mower (\$15k)	New Dump (\$20k)
Security Boat (\$1.25k)	Ford Garbage (\$35k)		Ford F150 (\$10k)					
			Golf Cart (\$3k)					

The graph below visually displays the distribution of cost following the recommended schedule for purchase and replacement. Compared with baseline replacement, the distribution of costs is relatively stable. It includes the proactive equipment purchasing and new equipment.



Because these costs are divided among two different funding methods, monthly utility billing and the annual assessment, it's necessary to display the costs being assessed through each method. Having a clear distinction between funds to be collected through monthly utility billing and those to be collected through the annual service charge is important not only for budgetary and accounting purposes, but also because the North Carolina Utilities Commission legally requires a clear documentation of revenue collected through utility billing. The table below displays how these costs are distributed under the suggested replacement plan.

	2012	2013	2014	2015	2016	2017	2018	2019	2020+
<b>Utilities</b>	\$15,000	\$35,000	\$18,500	\$6,500	\$27,500	\$125,000		\$15,000	\$21,000
<b>Assessment</b>	\$13,750	\$13,000	\$18,500	\$35,500	\$27,500		\$10,000	\$30,000	\$21,000

While the recommended purchasing schedule evenly distributes equipment costs as much as is feasible, the table above makes it clear that there are still points at which costs are instable, falling either higher or lower than the average. One such significant purchase comes with the expiration of the Freightliner in 2017, which is estimated to cost \$125,000. In order to further stabilize costs, **the recommendation of this report is to implement a 6 year purchasing plan (extending until 2017)** in order to smoothly make all necessary purchases.

The 6-year plan addresses approximately 80% of the equipment costs for the department, purchasing or replacing \$348,500 worth of equipment. It is important to note that "new purchases" will represent only 1.2% of the equipment purchases, costing \$4250. Out of the \$348,500 total, \$240,000 or 69% of the equipment purchased is billable through utility funding. The remaining \$108,250 or 31% will be billable through the annually assessed service charge. The most costly purchase, the Freightliner estimated at \$125,000, will be purchased in the final year of the 6-year plan to ensure that adequate funds have been collected for its purchase.

### Collection Methods and Alternatives

Utility billing occurs on a monthly cycle with approximately 890 accounts provided services by Lake Junaluska Public Works. To cover the \$227,500 cost of equipment replacement over 6 years, an additional \$36,891.89 would be needed each year, equaling an additional \$3,074.32 collected each month. With approximately \$550,000 collected annually or \$45,834 monthly through utility billing, **it would require a 6.71% utility revenue increase in order to cover the costs of purchasing and replacing equipment over the next 6 years.** These calculations use November 2011 as the first feasible month to implement the increased billing rates. **Appendix A displays and further explains these calculations.**

The service charge is billed to approximately 900 property owners annually who live on the grounds of Lake Junaluska Assembly. This method of collection been verified in court as the legal method through which Lake Junaluska can pay for the non-utilities services, such as maintenance of the streets, brush pick-up, ice removal and security. The equipment costs

billable through the assessment over the span of the 6-year plan total \$108,250, which equates to an additional \$18,041.67 annually over the next 6 years. With approximately \$660,000 collected annually through the service charge, **it would require a 2.73% service charge revenue increase in order to cover the costs of purchasing and replacing equipment over the next 6 years.** These calculations use 2012 as the first feasible year in which to implement the increase service charge rates. **Appendix A displays and further explains these calculations.**

In the short term, no other practical methods exist for collecting the funds necessary to purchase this equipment. It would be ineffective to mount a fundraising campaign in order to pay for the cost of replacing and purchasing equipment. It is also highly unlikely that grant funding exists for the purchase of these specific pieces of equipment, if such grant funding does exist, Lake Junaluska not likely be eligible as they are not an incorporated municipality.

Privatization of the services provided by Lake Junaluska Assembly, such as contracting out garbage pick-up, would likely provide ineffective and is highly unlikely to be feasible. It is also unlikely that Lake Junaluska would be annexed by a nearby municipality, such as Waynesville, in a quick enough fashion in which to address equipment concerns. Many planned equipment needs over the next two years are critical to the provision of Lake Junaluska's services and discussion of annexation would likely extend for a significant period of time.

Over the long term, however, equipment costs should be a consideration if annexation by the Town of Waynesville is considered. The most significant purchases of equipment by the Lake Junaluska Assemblies Public Works department involve the utilities departments, which would be taken over by the Town of Waynesville's Public Works department if Lake Junaluska were annexed. Further, much of the equipment purchased by the Lake Junaluska Assembly is secondhand equipment, formerly used by the Town of Waynesville and sold to Lake Junaluska at a discounted price.

Municipalities are not only eligible for state and federal grant funding, but may also make more efficient purchases of equipment through the use of state contracts, which lower the cost per unit through collective purchasing with other municipalities. If annexed, Lake Junaluska would retain the right to assess the service charge, which would allow for additional services beyond the service level provided by Waynesville. This would include services such as leaf and brush pick-up, ice removal, increased security and cosmetic enhancements to the Assembly Grounds.

Although not the core intent of this study, the issue of budgeting for maintenance costs was raised during the analysis of equipment. The historical yearly costs for maintenance have been \$17,509 in 2009 and \$17,340 in 2010, which represents a significant cost to the Public Works department. Based on this historical data, it is recommended that Public Works establish an equipment maintenance budget for 2012 in line with these maintenance costs. This can be implemented internally through the office of the Residential Service Director.

## Recommendations:

It is the recommendation of this report that the Lake Junaluska Assembly Public Works **increase utility revenue by 6.71% and service charge revenue by 2.73% implementing a 6-year purchasing plan** to acquire the equipment necessary to adequately serve the needs of Lake Junaluska. This approach to purchasing ensures that the department uses its funds efficiently while minimizing debt and maintaining a consistent level of quality.

While some new purchases would be made through the implementation of this plan, their costs amount to only 1% of the total equipment purchasing and replacement costs. While this suggested 6-year plan does include some pro-active purchasing, equipment is still generally used until the end of its expected lifetime. Equipment used by Lake Junaluska is significantly older than the average age of equipment used by North Carolina municipalities.

It is important to note that the true cost of using equipment until it breaks, without budgeting for replacement, is deceptive. The price tags are even higher than my projections because purchasing replacement equipment would require some type of financing, such as a loan, which will be at result in a higher total cost because of interest rates. These interest rates seem set to rise in the short-to medium term resulting in an ever-increased penalty for poor planning.

The Public Works crew has proven very successful at extending the lifetime of older equipment and repeatedly making repairs to equipment in order to return the equipment to working condition. Despite the purchase of new equipment, maintenance costs will continue to be an issue as equipment is pushed to the absolute end of its lifetime. In consideration of the constant need for maintenance, the Public Works department should formulate a maintenance budget in line with historical costs.

In order to increase the utility and service charge rates, this reports recommendation is for these findings to first be forwarded to the Community Council (JACC). Due to the critical nature of these decisions, it would be necessary to hold public hearings and allow for public comment during this process. The Community Council has held public hearings in the past and would be an appropriate venue for resident input. After holding hearings, the Community Council would forward its advisory decisions to the Lake Junaluska Board of Directors, preferably at the October 2011 meeting. The Board of Directors would need to approve these increases before they could be implemented. The NC Utility Commission has granted an exemption to Lake Junaluska Assembly, allowing LJA Public Works to make these changes upon Board approval.

It should be noted that the millage rate currently levied by Lake Junaluska, 27.5 cents per 100 dollars, is reasonably lower than the millage rate of surrounding municipalities. The towns of Waynesville, Maggie Valley, Clyde and Canton, average from 40 cents to 58 cents per 100 dollars of property value. Even considering that Lake Junaluska pays for fire services through utility billing, while other municipalities have the integrated fire departments, it is still clear that Lake Junaluska does not have a high millage rate. Any adjustment to implement this plan would leave Lake Junaluska with a low millage rate as compared to local municipalities.



The process of evaluating equipment strategically should occur on regular intervals in the Public Works department, with an equipment assessment performed every 4 to 6 years in order to calculate equipment costs over the next 5-8 years. This report would recommend that the next strategic equipment assessment occur between 2015 – 2016 in order to examine costs beyond the scope of this report.

## Appendices:

### Appendix A: Collection Method Calculations for Recommended Plan

Collection Method	Total Costs over 6-Years	Accounts	Billing Cycle	Extra Cost per Cycle	Current Revenue per Billing Cycle	Necessary Percent Increase †
Utilities	\$227,500	890	Monthly	\$3,074.32	\$45,834‡	6.71%
Assessment	\$108,250	900	Annual	\$18,041.67	\$660,000	2.73%

† Calculated by dividing extra cost per cycle (the cost of implementing the recommended 6 year plan) by the current revenue per billing cycle.

‡ Based on annual revenue of \$550,000 through utility billing collections, divided by 12 to calculate monthly revenue. Actual monthly revenue will vary based on the seasonality of utility use (more water use in summer compared to winter, for example).

### Appendix B: Acknowledgements

I would like to acknowledge the entire Public Works crew for their significant input and expertise that made this report possible; **Brian Aldridge, Bob Gaddis, Steve Bush, Chad Long, Kevin Long, Mike Rhinehart, Jeff Mull, David Ward, Anthony Green and Mike Green.** I would also like to thank **Gene McAbee** for his input regarding the needs of Lake Junaluska Security. Lastly, I would like to acknowledge **Buddy Young** for his leadership in organizing meetings to collect this information, providing estimates and contributing to this report.