

Town of Waynesville / Lake Junaluska Annexation Update ————— OCTOBER 2015



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Introduction

The study represents a joint effort between the Town of Waynesville and Martin-McGill to provide the management, elected officials and community members of the Town of Waynesville and Lake Junaluska Assembly (LJA) an updated analysis of the projected impact of assuming LJA's public works and utilities functions considering the current status of the programs. The initial study was completed in 2013. This report serves as an update to the original report using current assumptions of available information.

The LJA has proposed to transfer ownership and responsibility of the following services to the Town:

- Streets
- Sidewalks (that abut the streets for which TOW is assuming responsibility)
- Water and sewer infrastructure
- Pump station
- Water tank
- Water meters
- Lift station
- Stormwater ditches/culverts
- Storm drainage collection/conveyance system
- Public utilities/works administrative and billing support
- All road right-of-way along with any other applicable easements
- Fire protection
- Police protection
- Street lighting
- Planning and inspections services

The following items are out of scope and LJA will retain control of:

- Cell tower and associated revenue
- Water tank land
- Sidewalks and walking paths within LJA exempt properties
- Lake
- Dam
- Bridge / Road across the dam
- Recreational amenities and LJA public areas
 - Pool
 - Golf
 - Walking Trails
 - Playground
 - Picnic areas & benches
 - Outdoor Gym
 - Rose Garden
 - Monuments
 - Memorial structures

Overview

LJA is located at the eastern end of the Town's city limits. It is a 1.4 square mile area comprised of a full-time population of 1,683 people (Based on the State demographer's formula for Haywood County and number of residential units identified) in 751 households. However, the number of seasonal residents increases significantly during warmer months. The area consists of 1,054 unique parcels valued at \$228,542,304. Of the total, 30 parcels valued at \$34,076,300 are assumed to be exempt from property taxes, and the remaining 1,024 parcels valued at \$194,466,004 are taxable and taxed at the current tax rate.

LJA currently provides public safety, maintenance of 16.6 miles of streets, street lighting, water transmission, and sewer collection services. However, LJA receives some services from the Town, including fire protection and bulk water supply and sewer treatment. The Town charges each LJA household a fire protection fee of \$4 per month and the Assembly a fee of \$555.20 per month. Additionally, the Town currently bills LJA \$3.08 per 1,000 gallons for water and \$3.58 per 1,000 gallons sewer (\$6.66 total) bulk sales. LJA sells water and sewer service to its customers using its own rate structure and network of 15.4 miles of water lines and 15 miles of sewer lines. Water and sewer rates are \$21.80 + \$8.522 / 1000 gallons and \$15.62 + \$7.982 / 1000 gallons respectively. Average monthly residential usage is 2,391 gallons but it increases in warmer months due to many seasonal residents.

Financial Impact – First Year

The annexation of the proposed LJA area is projected to increase the revenues and the expenditures of the general, water, and sewer funds of the Town of Waynesville. During the first full year of the annexation, the following changes are estimated:

General Fund Revenues

Property Excluding Vehicles

The total taxable value of property, excluding vehicles in the proposed annexation area is \$194,466,004. At a tax rate of \$0.4382 per \$100 valuation and current collection rate of 97%, the estimated new revenue is \$826,586. For the purpose of this model, no tax rate increases or revaluations were considered.

Registered Vehicles

The ratio of the Town's FY 2016 Registered Vehicles Levy of \$313,545 to Property Excluding Vehicles Levy of \$4,719,492 is 6.64% and the Registered Vehicles levy collection rate is 100%. The estimated Property Excluding Vehicles levy for the annexation area is \$852,150, yielding an estimated Registered Vehicle Levy of the annexation area of \$56,614.

Assembly Fire and Police Fee

The Assembly has proposed to pay the Town approximately 2.03% of its \$5,549,320 fire and police budget costs in order to receive fire and police service on its properties that are exempt from taxes. The first year revenue totals \$113,000.

Utility Franchise Tax

The ratio of the Town's FY 2016 budget Utility Franchise Tax revenue of \$723,880 to the Town's area of 8.92 square miles is \$81,152 per square mile. The annexation area is comprised of 1.4 square miles, yielding estimated new revenue of \$113,613.

Cable Franchise Tax

The ratio of the Town's FY 2016 budget Cable Franchise Tax revenue of \$120,100 to the Town's estimated current population of 9,819 persons is \$12.23 per capita. The population of the annexation area is estimated to be 1,683 persons. An annexation area population of 1,683 persons generating \$12.23 per capita yields new revenue of \$20,580.

Local Option Sales Tax

It is estimated that the annexation of 1,683 persons to the Town's population will yield additional \$152.70 per capita or \$256,923 from Local Option Sales Tax Articles 39 and 40.

Powell Bill

The 2014 Powell Bill revenue allocation per mile of non-State system or local streets was \$1,642.85. The estimated new mileage for non-State system or local streets in the annexation area is 16.65 but only 9.37 miles meet Powell Bill standards, yielding estimated new revenue of \$15,394.

The 2014 Powell Bill revenue allocation per capita was \$20.56. The population of the annexation area is estimated to be 1,683 persons. Per capita new revenue for the annexation area is estimated to be \$34,585.

Estimated combined Powell Bill funds total \$49,979.

Beer and Wine Tax

The ratio of the Town's FY 2016 budget Beer and Wine Tax revenue of \$43,780 to the Town's current population of 9,819 persons yields revenue per capita of \$4.46. The estimated annexation area population is 1,683 persons, yielding estimated new revenue of \$7,502.

Solid Waste Fee

The Town charges a residential monthly solid waste fee of \$9 per household. An estimated 730 customers generate annual revenue of \$78,840.

Fire Protection

The Town currently collects \$4 per month from each of the 751 households and \$555.20 per month from the Assembly for commercial and hotel room protection, totaling \$42,710 over a year. Upon annexation, this service will be free and this revenue source will end.

The net general fund revenue generated by the annexation is estimated to total \$1,480,926 in the first full year, as shown in Tables 1 and 6.

General Fund Expenditures

Administration

No administrative staff members at LJA are assumed to be hired by the Town and no administrative costs are anticipated.

Street Maintenance

Two LJA employees are assumed to be assigned to the Town's Public Works department to provide streets maintenance. The estimated total cost of salaries and benefits for the two positions are \$78,000 in the first year. Maintenance and repair costs are also expected to be incurred each year. The total for the first year is \$101,150. The Town will also assume all street light accounts from the LJA that currently total \$37,255. The total of all costs related to Streets is \$216,405.

Solid Waste

Five LJA employees are assumed to be employed by the Town to provide solid waste services. The total cost of their salaries and benefits are expected to be \$195,000. It is assumed that LJA will convey one truck to the Town at no charge. The annual cost to provide yard waste service is projected by Town staff to be \$2.31 per household or \$1,686. One new truck and a packer truck are projected to be purchased at costs of \$29,000 and \$130,000 respectively. The total cost of all solid waste services will be \$355,686.

Public Safety

Four additional patrol officers will need to be hired as a result of the proposed annexation. Additional annual expenses will include \$170,000 for salaries and benefits, \$5,720 for initial equipment costs, \$60,000 for financing four vehicles, and \$14,000 for fuel and other operating costs. The total costs during the first year are expected to be \$249,720.

The Town will not need to make any changes for fire protection support. Fire Protection Compliance is assumed to not be addressed.

The total new expenditures, which exclude contingency, generated by the annexation are estimated to total \$821,811.

New general fund revenues generated by the annexation area are expected to exceed the new expenditures in the first year, as shown in Tables 1 and 6.

TABLE 1
TOWN OF WAYNESVILLE GENERAL FUND
LAKE JUNALUSKA ANNEXATION
FIRST YEAR FINANCIAL SUMMARY

<u>REVENUES</u>	
Real Property Levy	\$826,586
Registered Vehicles Levy	\$56,614
Assembly Fee	\$113,000
Utility Franchise Tax	\$113,613
Cable Franchise Tax	\$20,580
Local Option Sales Tax	\$256,923
Powell Bill Allocation (Mileage)	\$15,394
Powell Bill Allocation (Population)	\$34,585
Beer and Wine Tax	\$7,502
Solid Waste Fee	\$78,840
Fire Protection loss	(\$42,710)
Total Increase in Revenues	\$1,480,926
<u>EXPENDITURES</u>	
Street Maintenance	\$216,405
Solid Waste	\$355,686
Public Safety	\$249,720
Total Increase in Expenditures	\$821,811
Revenues Over Expenditures	\$659,115

Water and Sewer Funds Revenues

Water Retail

LJA staff state that they serve 858 water users of which 742 are residential consuming an average of 2,391 gallons per month. Many of the residents are seasonal and have zero consumption for many months of the year resulting in a higher monthly average during other months. However, data is not available to describe the extent of seasonal usage within LJA. The remaining 116 users connected to 1 - 6 inch meters consume an average of 3 million gallons per month. Applying the Town of Waynesville's rates to these users will generate approximately \$238,544 in a year. Additionally, pump station revenue of \$6.83 per month is expected to be collected from 115 users yielding \$9,425 annually. However, this new revenue will replace the Town's bulk water sales to LJA, which total about \$148,000. The net water revenue is estimated to be \$99,969 in the first year.

Sewer Retail

LJA has 810 sewer users with similar monthly usage to water users. There are 779 users inside LJA the proposed annexation area and 31 users outside, who only receive sewer service from LJA because Junaluska Sanitary District provides water service. Applying the Town of Waynesville's inside rates to the 779 users and outside rates to the 31 users generates approximately \$247,977 in a year. However, this new revenue will replace the Town's bulk sewer sales to LJA, which total about \$172,000. The net sewer revenue is estimated to be \$75,977 in the first year.

The net water and sewer funds revenue generated by the annexation is estimated to total \$175,946 in the first full year.

Water and Sewer Funds Expenditures

Salaries and Benefits

Two LJA employees are assumed to be employed by the Town to provide water and sewer services. The total cost of their salaries and benefits are expected to be \$85,400.

Operations

It is assumed from discussion with Town staff and the Town engineer that maintaining water and sewer lines will cost \$135,250 in the first year.

The total new expenditures excluding contingency generated by the annexation are estimated to total \$220,650.

New water and sewer fund revenues generated by the annexation area are expected to be less than the new expenditures in the first year, as shown in Table 2:

TABLE 2
TOWN OF WAYNESVILLE WATER & SEWER FUNDS
LAKE JUNALUSKA ANNEXATION
FIRST YEAR FINANCIAL SUMMARY

<u>REVENUES</u>	
Water	\$99,969
Sewer	\$75,977
Total Increase in Revenues	\$175,946
<u>EXPENDITURES</u>	
Salaries and Benefits	\$85,400
Maintenance and Repairs	\$135,250
Total Increase in Expenditures	\$220,650
Revenues Over Expenditures	(\$44,704)

Financial Impact – Ten Years

Beyond the first year of annexation, it is expected that the general, water, and sewer funds' revenues and expenditures will continue to change due to growth at LJA, inflation, and anticipated capital needs. Consequently, the net income in each fund will also be affected. The following is a list of the assumptions used for the ten year projections:

Revenue Assumptions

- There will be 0.44% average annual population and household growth.
- The assembly fee will annually increase by 3%.
- Property valuations will remain unchanged through FY 2019 and increase by an average annual rate of 0.5% thereafter.
- The real property collection rate will remain at 97%. The registered vehicle collection rate will be 100%.
- Utility Franchise and Local Option Sales tax will annually increase by 1.5%.
- Beer and wine tax per capita, Powell Bill allocations per mile and capita, and Cable franchise tax will not change.
- Solid waste fee increases by an average annual rate of 1%.
- Water and sewer usage will increase by the State population growth rate of 0.44%.

Operating Expenditure Assumptions

- Maintenance and repair, lights, yard waste, and other costs will increase 3% annually.
- Salaries and benefits, other operating, and maintenance expenditures will increase by 3% annually.

Capital Expenditure Assumptions

During the next 10 years, additional capital projects will be needed in LJA in addition to vehicles. McGill Associates was commissioned to ascertain the condition of the water, sewer, and streets and project the costs required to bring the facilities to reasonable conditions. Their report is attached in the Appendix.

Streets and Sidewalks

LJA is comprised of approximately 16.6 miles of streets where 9.37 miles are currently Powell Bill eligible. Approximately \$2.6 million of improvement projects was identified for LJA streets, as shown in the following two conditional categories:

Critical	\$1.62 million
Poor	<u>\$0.98 million</u>
TOTAL	\$2.60 million

The above costs may be higher since they do not include engineering fees. This level of capital improvement may place financial hardship upon the general fund. Therefore, the Town staff proposes instead to allocate \$101,150 in annual maintenance costs adjusted for inflation to address street projects.

Public Works will need one more truck in addition to the two planned for the first year for a total of \$194,000 in vehicle expense for 10 years.

The Town does not propose to make any changes to the current LJA street lighting program. The Town will simply assume the current lighting contract. Therefore, no capital needs are expected for street lighting. Details are shown in Table 3.

TABLE 3
LAKE JUNALUSKA ASSEMBLY ROADS PROGRAM
CAPITAL IMPROVEMENTS PLAN

PROJECT NAME	TOTAL COST	YEAR 1 2017	YEAR 2 2018	YEAR 3 2019	YEAR 4 2020	YEAR 5 2021	YEAR 6 2022	YEAR 7 2023	YEAR 8 2024	YEAR 9 2025	YEAR 10 2026	YEAR 11+ 2023+
PUBLIC WORKS												
VEHICLES & EQUIPMENT	194,000	159,000						35,000				
CRITICAL ROAD REPAIRS:												
HOLSTON VILLAGE	164,310											
ALDERSGATE	103,150											
HICKORY HILLS	298,000											
NORTH LAKESHORE	604,000											
WELDON WAY	61,100											
SIMPLICITY & SLEEPY HOLLOW	119,400											
COKESBERRY	68,950											
ATKINS	89,450											
CHAPEL	112,680											
POOR ROAD REPAIRS:												
TILLMAN	128,450											
OXFORD	247,800											
CRUM	206,150											
SOUTH LAKESHORE	45,000											
WELLS	53,450											
MEMORY	35,825											
PONDER	22,100											
MOUZAN & LIBERTY	140,650											
SLEEPY HOLLOW	104,350											
PUBLIC WORKS IMPROVEMENTS SUBTOTAL	2,798,815	159,000	0	0	0	0	0	35,000	0	0	0	0
TOTAL	2,798,815	159,000	0	0	0	0	0	35,000	0	0	0	0

DEBT PACKAGES	0											
ANNUAL DEBT	0	0	0	0	0	0	0	0	0	0	0	0
ANNUAL CAPITAL OUTLAY	194,000	159,000	0	0	0	0	0	35,000	0	0	0	0

NOTES:
 COSTS DO NOT REFLECT POSSIBLE SAVINGS FROM COMBINING STREETS AND WATER/SEWER PROJECTS.
 REPAIRS TO CHAPEL DRIVE ARE ASSEMBLY'S RESPONSIBILITY.
 ROAD COSTS DO NOT INCLUDE ENGINEERING FEES.

TABLE 4
LAKE JUNALUSKA ASSEMBLY WATER AND SEWER PROGRAM
CAPITAL IMPROVEMENTS PLAN

PROJECT NAME	TOTAL COST	YEAR 1 2017	YEAR 2 2018	YEAR 3 2019	YEAR 4 2020	YEAR 5 2021	YEAR 6 2022	YEAR 7 2023	YEAR 8 2024	YEAR 9 2025	YEAR 10 2026	YEAR 11+ 2027+
WATER IMPROVEMENTS												
WATER METERS	158,512			17,826	18,360	18,911	19,479	20,063	20,665	21,285	21,923	
SYSTEM EXTENSION PROGRAM	1,231,568	231,971	238,931	246,099	253,481	261,086						
SYSTEM UPGRADES	2,430,064						457,714	471,445	485,588	500,156	515,161	
WATER IMPROVEMENTS SUBTOTAL	3,820,144	231,971	238,931	263,924	271,842	279,997	477,192	491,508	506,253	521,441	537,084	0
WASTEWATER IMPROVEMENTS												
PHASE 1 IMPROVEMENTS (LIBERTY & KILGORE)	892,000		892,000									
PHASE 1 IMPROVEMENTS (IVEY & STUART)	653,000			653,000								
PHASE 1 IMPROVEMENTS (LITTLETON & GLENDALE)	403,000				403,000							
PHASE 2 IMPROVEMENTS (WELDON WAY)	362,000						362,000					
PHASE 2 IMPROVEMENTS (OXFORD & COKESBERRY)	887,000							887,000				
PHASE 2 IMPROVEMENTS (ATKINS LOOP)	669,000										669,000	
WASTEWATER IMPROVEMENTS SUBTOTAL	3,866,000	0	892,000	653,000	403,000	0	362,000	0	887,000	0	669,000	0
TOTAL	7,686,144	231,971	1,130,931	916,924	674,842	279,997	839,192	491,508	1,393,253	521,441	1,206,084	0



DEBT PKG 1



DEBT PKG 2

DEBT PACKAGES	7,527,632			3,179,568				4,348,064				
ANNUAL DEBT	7,527,632	231,971	1,130,931	899,099	656,481	261,086	819,714	471,445	1,372,588	500,156	1,184,161	0
ANNUAL CAPITAL OUTLAY	158,512	0	0	17,826	18,360	18,911	19,479	20,063	20,665	21,285	21,923	0

Water and Sewer

LJA is comprised of approximately 15.4 miles of water lines and 15 miles of sewer lines. The needs for the water and sewer program include converting water meters to radio read, and two phases of water line improvements and extensions totaling \$3.82 million. Phase 1 of the Water CIP focuses on replacing all 1" water lines with 2" and 6" lines, replacing sufficient length of existing 2" line with 6" lines to reduce 2" lines to 1,000 linear feet, and making some additional upgrades. Phase 2 of the CIP sets aside money to replace 10% of existing 6" waterlines with new line, and replaces 50% of remaining 2" lines with new 2" and 6".

The sewer capital program requires two phases of sewer line improvements totaling \$3.86 million. Phase 1 focuses on high priority needs and Phase 2 focuses on medium priority needs. A few LJA residents are unsewered and have their own septic tanks. It is assumed that there is no obligation to provide sewer to them. Additional maintenance and repair monies have also been factored in for water / sewer to address preventive maintenance needs and smaller repair projects.

The names and timing of each of the aforementioned projects are summarized in Table 4. The CIP is designed to show each capital need in a separate row showing the name in the left-most column. The following columns to the right show the total estimated cost of the project and the year or years in which the project is planned.

In order to minimize the impact of expensive capital projects in the CIP, the analysis assumes that funds will be acquired by borrowing capital to pay for the line improvements. The remaining vehicle and water meter costs will be paid by cash outlays. The proposed method to finance the improvements in the CIP is shown in Table 5.

TABLE 5
TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
PROPOSED FUTURE DEBT PACKAGE

FISCAL YEAR	TYPE	PRINCIPAL	YEARLY PAYMENT	RATE	TERM (YEARS)
2016	160A-20	\$ 3,179,568	\$ 303,825	5%	15
2020	160A-20	\$ 4,348,064	\$ 443,670	6%	15

The projected new income for the general fund consistently exceeds its new operating and capital expenditures throughout the next ten years with current tax rates assuming the street projects are not funded. The majority of new income comes from ad valorem taxes and Assembly fees. As previously discussed, the general fund realizes a net income in the first year of \$659,115. By the tenth year, cumulative income grows to \$7.48 million, as shown in Table 6.

TABLE 6
TOWN OF WAYNESVILLE ANNEXATION OF LAKE JUNALUSKA ASSEMBLY
GENERAL FUND
FINANCIAL ANALYSIS FUNDING ENTIRE CIP

LINE ITEM	YEAR 1 2017	YEAR 2 2018	YEAR 3 2019	YEAR 4 2020	YEAR 5 2021	YEAR 6 2022	YEAR 7 2023	YEAR 8 2024	YEAR 9 2025	YEAR 10 2026
GENERAL FUND REVENUES:										
REAL PROPERTY LEVY	826,586	826,586	826,586	830,718	834,872	839,046	843,242	847,458	851,695	855,954
ASSEMBLY FEES (2.03% OF BUDGETED FIRE AND POLICE)	113,000	116,390	119,882	123,478	127,182	130,998	134,928	138,976	143,145	147,439
REGISTERED VEHICLES LEVY	56,614	56,614	56,614	56,897	57,181	57,467	57,754	58,043	58,333	58,625
UTILITY FRANCHISE TAX	113,613	115,318	117,047	118,803	120,585	122,394	124,230	126,093	127,985	129,904
CABLE FRANCHISE TAX	20,580	20,580	20,580	20,580	20,580	20,580	20,580	20,580	20,580	20,580
LOCAL OPTION SALES TAX	256,923	260,777	264,689	268,659	272,689	276,779	280,931	285,145	289,422	293,764
POWELL BILL ALLOCATION (MILEAGE)	15,394	15,095	15,095	15,095	15,095	15,095	15,095	15,095	15,095	15,095
POWELL BILL ALLOCATION (POPULATION)	34,585	34,737	34,890	35,044	35,198	35,353	35,508	35,665	35,822	35,979
BEER AND WINE TAX	7,502	7,535	7,568	7,601	7,635	7,668	7,702	7,736	7,770	7,804
SOLID WASTE FEE	78,840	79,979	81,134	82,306	83,495	84,701	85,924	87,165	88,424	89,701
LOST REVENUE:										
FIRE PROTECTION	-42,710	-42,869	-43,028	-43,188	-43,349	-43,510	-43,673	-43,835	-43,999	-44,163
TOTAL REVENUES	1,480,926	1,490,740	1,501,055	1,515,993	1,531,163	1,546,571	1,562,221	1,578,120	1,594,272	1,610,682
GENERAL FUND EXPENDITURES:										
STREETS										
SALARIES AND BENEFITS (2)	78,000	80,340	82,750	85,233	87,790	90,423	93,136	95,930	98,808	101,772
MAINTENANCE & REPAIRS	101,150	104,185	107,310	110,529	113,845	117,261	120,778	124,402	128,134	131,978
LIGHTS	37,255	38,400	39,600	40,800	42,000	43,300	44,600	45,900	47,300	48,700
SOLID WASTE										
SALARIES AND BENEFITS (5)	195,000	200,850	206,876	213,082	219,474	226,058	232,840	239,825	247,020	254,431
YARD WASTE	1,686	1,737	1,789	1,843	1,898	1,955	2,014	2,074	2,136	2,200
PUBLIC SAFETY										
SALARIES AND BENEFITS (4)	170,000	178,500	187,400	196,800	206,600	216,900	227,700	239,100	251,100	263,700
EQUIPMENT	79,720	76,000	76,450	82,900	83,450	85,490	90,560	91,120	91,680	99,240
TOTAL OPERATING EXPENDITURES	662,811	680,011	702,175	731,186	755,058	781,387	811,628	838,351	866,178	902,021
CAPITAL OUTLAY	159,000	0	0	0	0	0	35,000	0	0	0
NEW DEBT	0	0	0	0	0	0	0	0	0	0
TOTAL EXPENDITURES	821,811	680,011	702,175	731,186	755,058	781,387	846,628	838,351	866,178	902,021
REVENUES OVER EXPENDITURES	659,115	810,729	798,881	784,807	776,105	765,183	715,593	739,769	728,093	708,661
ACCUAL ADJUSTMENTS										
NET INCOME	659,115	810,729	798,881	784,807	776,105	765,183	715,593	739,769	728,093	708,661
CUMULATIVE NET INCOME	659,115	1,469,844	2,268,724	3,053,531	3,829,636	4,594,819	5,310,412	6,050,181	6,778,274	7,486,935

When the LJA water and sewer systems are acquired by the Town, we concluded that the water fund's net income would remain positive over nine of the next 10 years at a 10-year annual average of \$124,800 if proposed rate increases are implemented. An unrestricted net assets amount of \$2.2 million is achieved by Year 10. The sewer fund's net income would remain positive over seven of the next 10 years at a 10-year annual average of \$48,800 if its proposed rate increases are implemented. An unrestricted net assets amount of \$1.5 million is achieved by Year 10. Details are shown in Table 7.

As a result of our analysis, we have modeled the following water and sewer revenue increases from all water and sewer users. These increases would only affect fixed and volume charges but not tap, impact, or miscellaneous fees. These revenue increases are arranged in time to minimize the impact to most users as shown below and in the financial analysis table.

- 8% water revenue increase in FY 2017.
- 5% annual water revenue increases from FY 2018 – 2020.
- 3% annual water revenue increases from FY 2021 – 2026.
- 10% annual sewer revenue increases from FY 2017 – 2018.
- 5% sewer revenue increase in FY 2019.
- 4% annual sewer revenue increases from FY 2020 – 2026.

TABLE 7
TOWN OF WAYNESVILLE
FINANCIAL ANALYSIS WITH LJA ANNEXATION
WATER AND SEWER FUNDS

LINE ITEM	AUDIT 2008	AUDIT 2009	AUDIT 2010	AUDIT 2011	AUDIT 2012	AUDIT 2013	AUDIT 2014	ESTIMATE 2015	BUDGET 2016	YEAR 1 2017	YEAR 2 2018	YEAR 3 2019	YEAR 4 2020	YEAR 5 2021	YEAR 6 2022	YEAR 7 2023	YEAR 8 2024	YEAR 9 2025	YEAR 10 2026
WATER																			
REVENUES:																			
WATER CHARGES	1,991,861	2,131,360	2,210,793	2,283,210	2,389,711	2,465,029	2,667,179	2,798,400	2,929,400	2,958,694	2,988,281	3,018,164	3,048,345	3,078,829	3,109,617	3,140,713	3,172,120	3,203,842	3,235,880
NET LJA REVENUE										99,969	100,368	100,768	101,170	101,574	101,979	102,386	102,795	103,206	103,619
WATER TAPS	81,240	47,300	32,403	32,350	36,050	36,015	23,100	20,000	40,000	40,400	40,804	41,212	41,624	42,040	42,461	42,885	43,314	43,747	44,185
NONOPERATING INCOME:																			
INVESTMENT INCOME	39,108	8,397	1,257	234	0	0	0	0	0	1,000	1,100	1,200	1,300	1,400	1,600	2,000	0	0	0
DEVELOPERS AND GOVERNMENT CONTRIBUTIONS																			
ELECTRIC FUND CONTRIBUTED CAPITAL				97,250			31,115												
MISCELLANEOUS	14	12,112	1,714	113	6,873	15,083	8,421	51,300	13,500	13,635	13,771	13,909	14,048	14,189	14,331	14,474	14,619	14,765	14,912
TOTAL REVENUES	2,112,223	2,199,169	2,246,167	2,413,157	2,432,634	2,516,127	2,729,815	2,869,700	2,982,900	3,113,698	3,144,324	3,175,253	3,206,488	3,238,031	3,269,987	3,302,459	3,332,849	3,365,560	3,398,596
NEW SOURCES OF REVENUE:																			
REVENUE FROM WATER RATE INCREASE										244,693	413,879	594,780	788,119	915,135	1,048,182	1,187,511	1,333,384	1,486,072	1,645,859
PERCENTAGE INCREASE										8%	5%	5%	5%	3%	3%	3%	3%	3%	3%
TOTAL REVENUES	2,112,223	2,199,169	2,246,167	2,413,157	2,432,634	2,516,127	2,729,815	2,869,700	2,982,900	3,358,391	3,558,203	3,770,033	3,994,606	4,153,167	4,318,170	4,489,970	4,666,232	4,851,631	5,044,455
EXPENDITURES:																			
WATER ADMINISTRATION																			
GENERAL FUND	181,930	202,280	180,860	200,000	218,612	215,828	247,260	182,390	232,140	239,104	246,277	253,666	261,276	269,114	277,187	285,503	294,068	302,890	311,977
INTERNAL SERVICE FUND								312,240	370,570	381,687	393,138	404,932	417,080	429,592	442,480	455,754	469,427	483,510	498,015
WATER MAINTENANCE																			
SALARIES AND BENEFITS	387,430	407,732	406,833	406,606	405,005	344,405	409,972	318,620	604,100	622,223	640,890	660,116	679,920	700,317	721,327	742,967	765,256	788,213	811,860
SALARIES AND BENEFITS - LJA										42,700	43,981	45,300	46,659	48,059	49,501	50,986	52,516	54,091	55,714
MAINTENANCE	113,326	155,191	161,911	121,444	196,958	215,068	224,241	247,000	337,000	343,740	350,615	357,627	364,780	372,075	379,517	387,107	394,849	402,746	410,801
PROFESSIONAL SERVICES	2,329	22,056	5,533	0	0	20,000	1,980	22,000	87,260	22,000	22,440	22,889	23,347	23,814	24,290	24,776	25,271	25,777	26,292
OTHER	140,712	137,933	112,513	136,078	150,957	130,315	180,833	114,950	145,610	148,522	151,493	154,522	157,613	160,765	163,981	167,260	170,605	174,017	177,498
WATER OPERATIONS																			
SALARIES AND BENEFITS	364,855	395,813	403,496	415,531	405,955	417,348	445,512	440,360	469,650	483,740	498,252	513,199	528,595	544,453	560,787	577,610	594,939	612,787	631,170
PROFESSIONAL SERVICES	30,787	22,468	17,363	8,111	11,948	9,683	19,433	15,000	30,000	30,600	31,212	31,836	32,473	33,122	33,785	34,461	35,150	35,853	36,570
UTILITIES	14,771	18,437	17,484	16,343	16,725	19,710	19,540	19,000	21,500	21,930	22,369	22,816	23,272	23,738	24,212	24,697	25,191	25,694	26,208
MAINTENANCE	138,694	196,096	141,625	150,245	149,460	132,969	178,040	170,000	170,000	173,400	176,868	180,405	184,013	187,694	191,448	195,277	199,182	203,166	207,229
OTHER	84,584	69,884	76,695	86,487	83,093	89,973	134,731	176,000	230,410	235,018	239,719	244,513	249,403	254,391	259,479	264,669	269,962	275,361	280,869
TOTAL OPERATING EXPENDITURES	1,459,418	1,627,890	1,524,313	1,540,845	1,638,713	1,595,299	1,861,542	2,017,560	2,698,240	2,744,664	2,817,252	2,891,822	2,968,431	3,047,135	3,127,993	3,211,066	3,296,415	3,384,106	3,474,203
CAPITAL OUTLAY	519,622	357,358	250,993	314,320	184,709	661,644	668,737	424,780	619,000	417,800	454,000	464,026	482,760	529,511	536,479	821,463	837,465	853,585	869,723
TRANSFER TO GENERAL FUND	52,450	74,420	91,950	97,250	103,100	103,370	109,230	112,020	114,190										
EXISTING DEBT	297,481	323,114	323,115	333,273	359,329	302,990	239,458	167,100	130,520	139,425	138,438	137,416	136,412	135,408	72,776	71,772	70,768	69,764	68,759
NEW DEBT										0	58,241	175,323	234,165	234,165	234,165	350,267	466,370	466,370	466,370
TOTAL EXPENDITURES	2,328,971	2,382,782	2,190,371	2,285,688	2,285,851	2,663,303	2,878,967	2,721,460	3,561,950	3,301,889	3,467,931	3,668,587	3,821,768	3,946,219	3,971,413	4,454,568	4,671,019	4,773,825	4,879,055
REVENUES OVER EXPENDITURES	-216,748	-183,613	55,796	127,469	146,783	-147,176	-149,152	148,240	-579,050	56,503	90,272	101,446	172,839	206,948	346,757	35,402	-4,786	77,807	165,399
ACCRUAL ADJUSTMENTS	319,035	646,105	624,501	220,976	192,410	331,923	314,355												
NET INCOME	102,287	462,492	680,297	348,445	339,193	184,747	165,203	148,240	-579,050	56,503	90,272	101,446	172,839	206,948	346,757	35,402	-4,786	77,807	165,399
UNRESTRICTED NET ASSETS	1,016,909	1,135,203	1,240,558	1,361,398	1,448,256	1,275,731	1,444,670	1,592,910	1,013,860	1,070,363	1,160,635	1,262,081	1,434,920	1,641,868	1,988,625	2,024,027	2,019,240	2,097,047	2,262,446
UNRESTRICTED NET ASSETS / TOTAL EXPENDITURES	43.66%	47.64%	56.64%	59.56%	63.36%	47.90%	50.18%	58.53%	28.46%	32.42%	33.47%	34.40%	37.55%	41.61%	50.07%	45.44%	43.23%	43.93%	46.37%
NEW DEBT:																			
LOAN AMOUNT											1,219,000	1,231,568				2,430,064			
PAYMENT											58,241	58,841				116,103			
ANNUAL PAYMENTS											116,482	117,683				232,205			
RATE											5.0%	5.0%				5.0%			
TERM											15	15				15			
ASSUMPTIONS:																			
WATERSHED TIMBER SALE REVENUES ARE NEGATED BY RELATED EXPENDITURES. SINCE IT CREATES NO INCOME AND ITS TIMING IS UNPREDICTABLE BY TOWN STAFF, THE OFFSETTING REVENUES AND EXPENDITURES ARE NOT CONSIDERED.																			

TABLE 7
TOWN OF WAYNESVILLE
FINANCIAL ANALYSIS WITH LJA ANNEXATION
WATER AND SEWER FUNDS

SEWER

REVENUES:

SEWER CHARGES	1,840,185	1,928,124	1,902,679	1,889,552	1,874,888	1,980,110	2,058,072	2,162,650	2,164,800	2,186,448	2,208,312	2,230,396	2,252,700	2,275,227	2,297,979	2,320,959	2,344,168	2,367,610	2,391,286
NET LJA REVENUE										75,977	76,311	76,647	76,984	77,323	77,663	78,005	78,348	78,693	79,039
SEWER TAPS	52,782	57,050	21,000	40,050	36,124	16,500	19,750	19,000	20,000	20,200	20,402	20,606	20,812	21,020	21,230	21,443	21,657	21,874	22,092
IMPACT FEES	1,920	1,920	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDUSTRIAL DISCHARGE PERMITS	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NONOPERATING INCOME:																			
INVESTMENT INCOME	22,065	7,689	1,777	607	0	0	0	0	0	1,000	1,000	1,000	1,000	1,000	1,000	1,000	0	0	0
DEVELOPERS AND GOVERNMENT CONTRIBUTIONS							31,445												
TRANSFER FROM GENERAL FUND																			
MISCELLANEOUS	1,923	541	983	15,000	6,095	320	2,562	54,400	22,900	23,129	23,360	23,594	23,830	24,068	24,309	24,552	24,797	25,045	25,296
TOTAL REVENUES	1,919,075	1,995,324	1,926,439	1,945,209	1,917,107	1,996,930	2,111,829	2,236,050	2,207,700	2,306,754	2,329,386	2,352,243	2,375,326	2,398,638	2,422,181	2,445,958	2,468,971	2,493,222	2,517,713

NEW SOURCES OF REVENUE:

REVENUE FROM SEWER RATE INCREASE										226,243	482,284	626,720	751,372	883,199	1,022,569	1,169,870	1,325,511	1,489,919	1,663,545
PERCENTAGE INCREASE										10%	10%	5%	4%	4%	4%	4%	4%	4%	4%
TOTAL REVENUES	1,919,075	1,995,324	1,926,439	1,945,209	1,917,107	1,996,930	2,111,829	2,236,050	2,207,700	2,532,997	2,811,670	2,978,962	3,126,698	3,281,837	3,444,750	3,615,828	3,794,482	3,983,141	4,181,258

EXPENDITURES:

SEWER ADMINISTRATION

GENERAL FUND	165,320	181,720	166,730	171,580	179,293	183,539	215,760	152,050	171,330	179,897	188,891	198,336	208,253	218,665	229,599	241,079	253,132	265,789	279,079
INTERNAL SERVICE FUND								265,830	238,500	245,655	253,025	260,615	268,434	276,487	284,781	293,325	302,125	311,188	320,524

SEWER MAINTENANCE

SALARIES AND BENEFITS	223,042	237,414	226,287	218,767	179,282	202,312	196,293	317,790	388,670	400,330	412,340	424,710	437,452	450,575	464,092	478,015	492,356	507,126	522,340
SALARIES AND BENEFITS - LJA										42,700	43,981	45,300	46,659	48,059	49,501	50,986	52,516	54,091	55,714
PROFESSIONAL SERVICES		8,384	0	0	135	20,788	0	34,000	92,260	34,000	34,680	35,374	36,081	36,803	37,539	38,290	39,055	39,836	40,633
MAINTENANCE		31,224	37,913	40,822	43,907	48,506	31,510	40,000	70,000	40,000	40,800	41,616	42,448	43,297	44,163	45,046	45,947	46,866	47,804
MAINTENANCE AND REPAIRS - LJA										135,250	139,308	143,487	147,791	152,225	156,792	161,496	166,340	171,331	176,471
OTHER	84,294	51,030	35,260	36,328	32,523	40,167	52,393	52,490	83,580	85,252	86,957	88,696	90,470	92,279	94,125	96,007	97,927	99,886	101,884

SEWER OPERATIONS

SALARIES AND BENEFITS	493,443	520,651	525,243	533,984	551,860	547,217	598,777	599,980	662,310	682,179	702,645	723,724	745,436	767,799	790,833	814,558	838,994	864,164	890,089
PROFESSIONAL SERVICES	10,287	11,205	20,770	11,777	9,881	8,557	12,102	13,000	22,000	22,440	22,889	23,347	23,814	24,290	24,776	25,271	25,777	26,292	26,818
UTILITIES	176,146	171,307	165,869	192,045	167,465	180,476	189,546	160,000	182,000	185,640	189,353	193,140	197,003	200,943	204,962	209,061	213,242	217,507	221,857
MAINTENANCE	121,981	93,521	83,216	66,702	68,940	71,300	67,174	73,400	86,050	87,771	89,526	91,317	93,143	95,006	96,906	98,844	100,821	102,838	104,894
OTHER	75,817	92,012	86,228	71,324	66,170	75,697	82,537	153,280	144,120	147,002	149,942	152,941	156,000	159,120	162,303	165,549	168,860	172,237	175,681
TOTAL OPERATING EXPENDITURES	1,350,330	1,398,468	1,347,516	1,343,329	1,299,456	1,378,559	1,446,092	1,861,820	2,140,820	2,288,116	2,354,336	2,422,603	2,492,983	2,565,548	2,640,371	2,717,526	2,797,093	2,879,152	2,963,787
CAPITAL OUTLAY	346,011	302,806	307,075	411,935	153,793	231,534	320,597	328,870	136,500	335,800	259,900	257,000	277,100	264,200	275,400	248,800	261,200	273,800	286,400
TRANSFER TO GENERAL & ELECTRIC FUNDS	49,400	70,180	83,070	81,700	77,930	77,400	83,790	642,820	88,310										
EXISTING DEBT	129,738	129,738	41,156	83,042	41,891	43,098	43,098	43,100	0	0	0	0	0	0	0	0	0	0	0
NEW DEBT										0	108,694	310,459	403,530	446,530	489,530	587,385	685,240	685,240	685,240
TOTAL EXPENDITURES	1,875,479	1,901,192	1,778,817	1,920,006	1,573,070	1,730,591	1,893,577	2,876,610	2,365,630	2,623,916	2,722,930	2,990,062	3,173,613	3,276,278	3,405,300	3,553,711	3,743,532	3,838,191	3,935,427

REVENUES OVER EXPENDITURES	43,596	94,132	147,622	25,203	344,037	266,339	218,252	-640,560	-157,930	-90,919	88,740	-11,100	-46,915	5,559	39,450	62,118	50,950	144,950	245,831
ACCRUAL ADJUSTMENTS	54,305	8,525	-70,599	54,899	-267,199	-188,474	-47,746												

NET INCOME	97,901	102,657	77,023	80,102	76,838	77,865	170,506	-640,560	-157,930	-90,919	88,740	-11,100	-46,915	5,559	39,450	62,118	50,950	144,950	245,831
UNRESTRICTED NET ASSETS	685,255	772,011	1,107,224	1,125,126	1,448,459	1,694,332	1,899,932	1,259,372	1,101,442	1,010,523	1,099,262	1,088,163	1,041,248	1,046,807	1,086,257	1,148,375	1,199,324	1,344,274	1,590,105
CUMULATIVE EARNINGS / TOTAL EXPENDITURES	36.54%	40.61%	62.24%	58.60%	92.08%	97.90%	100.34%	43.78%	46.56%	38.51%	40.37%	36.39%	32.81%	31.95%	31.90%	32.31%	32.04%	35.02%	40.40%

NEW DEBT:

LOAN AMOUNT											2,275,000	1,948,000		900,000		1,918,000			
PAYMENT											108,694	93,071		43,000		97,855			
ANNUAL PAYMENTS											217,388	186,142		86,000		195,710			
RATE											5.0%	5.0%		5.0%		6.0%			
TERM											15	15		15		15			

WATER MAINTENANCE	643,797	722,912	686,790	664,128	752,920	709,788	817,026	702,570	1,173,970	1,136,485	1,165,437	1,195,155	1,225,659	1,256,971	1,289,114	1,322,110	1,355,981	1,390,754	1,426,451
SEWER MAINTENANCE	307,336	288,444	261,547	255,095	211,805	242,479	248,686	370,280	472,250	485,582	499,297	513,406	527,921	542,854	558,217	574,022	590,283	607,012	624,224

Findings and Conclusions

The Town and LJA leadership feel that the time is right to bring the communities closer together. Annexation will benefit the region as a whole and is in the best long-term interest of both parties. LJA has a well-run public works/public utilities systems with conscientious and quality staff supporting them. The state of the LJA infrastructure and needed capital projects for LJA are not abnormal when compared to other smaller system across the State. Many are facing similar capital investment challenges and considering other operational and/or consolidation options. Systems across the country are dealing with aging infrastructure and limited financial resources.

While the capital project estimates for LJA were cautious and there may be some opportunity for cross project coordination and savings, additional monies will be needed from the Town's water and sewer funds in order to finance the projected losses from annexing LJA. Fortunately, the Town's water and sewer rates are low when compared to other providers in the area and will be able to tolerate adjustments. Table 8 compares the Town's charges with the charges by other providers within a 50-mile radius.

TABLE 8
TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
COMPARISON OF WAYNESVILLE WATER & SEWER CHARGES TO PEERS

Water Bill for 4,000 gal: Waynesville - \$19.77, 50 mi radius average - \$29.50

Sewer Bill for 4,000 gal: Waynesville - \$20.69, 50 mi radius average - \$32.40

Water Bill for 10,000 gal: Waynesville - \$32.85, 50 mi radius average - \$52.61

Sewer Bill for 10,000 gal: Waynesville - \$36.83, 50 mi radius average - \$65.00

Source: UNC EFC

The financial effect of the annexation upon residents of LJA includes both increases and decreases to various bills, but the net effect is a decrease of \$320.80 in the first year. As shown in Table 9, a resident with a \$215,000 house and a \$20,000 vehicle who uses 2,400 gallons of water and sewer service per month utilizing a pump will see the greatest increase in property taxes and the greatest savings in water charges. Additionally, non-exempt properties will no longer pay additional fees for fire / police protection.

TABLE 9
TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
FIRST YEAR EFFECT UPON LJA RESIDENT

	LJA	TOW	DIFFERENCE
TAX / ASSESSMENT - PROPERTY (\$215,000) ^	\$ 757.88	\$ 942.13	\$ 184.26
TAX / ASSESSMENT - VEHICLE (\$20,000) ^		\$ 87.64	\$ 87.64
WATER (2400 GALLONS / MONTH)	\$ 507.03	\$ 195.38	\$ (311.65)
SEWER (2400 GALLONS / MONTH)	\$ 417.32	\$ 196.63	\$ (220.69)
TRASH	\$ 202.32	\$ 108.00	\$ (94.32)
FIRE PROTECTION	\$ 48.00		\$ (48.00)
PUMP FEE (\$6.83 / MONTH) *		\$ 81.96	\$ 81.96
TOTAL	\$1,932.55	\$1,611.75	\$ (320.80)
^ LJA assessment rate: \$0.3525 / \$100			
Town assessment rate: \$0.4382 / \$100			
* Only paid by approximately 115 households that require a pump for water service. □			

Does not consider impact of property taxes on federal taxes.
 Considers First Year Only.

Appendix – Capital Improvements Plan

Lake Junaluska Assembly Infrastructure Assessment – Water, Sewer and Street Systems

REVISED JUNE 2015

The infrastructure assessment for the Lake Junaluska Assembly (LJA) water and sewer systems utilized three (3) previously prepared reports as the basis for determining the condition of the existing system. These documents included the *Water and Sewer Assessment and Appraisal* prepared by the LJA Public Works Department dated September 2011, the *Water and Sewer Capital Improvement Plan* dated May 1, 2012 prepared by Cavanaugh & Associates, and the *Water and Sewer System Assessment and Appraisal* prepared by the LJA Public Works Department dated Spring 2012. The scope of our effort included meeting with LJA staff and performing limited field visits to “spot check” the general assessments and recommendations of these previously prepared documents. Updated project cost estimates were then prepared for the recommended improvements.

The infrastructure assessment for the LJA street system utilized the *Strategic Pavement Survey* prepared by the Lake Junaluska Assembly Public Works department (Spring 2011) extensively to determine the condition of the existing roads, and limited site visits were performed to determine the general accuracy of the LJA survey.

A. Water System

The water system serving Lake Junaluska is comprised of distribution system made up of approximately 15.4 miles of pipeline ranging in size from 1-inch in diameter to 8-inches. The system also includes a 230,000 gallon concrete storage tank and a booster pump station. Water is supplied to the system from the Town of Waynesville through two (2) metered connections. While some of the water lines have been installed within the past 10 years, much of the system is over 100 years old. These older lines are both galvanized pipes and cast iron, with lead joints. The age and condition of the water system results in frequent breaks and significant leakage.

The proposed improvements to the water system were prioritized into two (2) phases. The first phase targets the portions of the water system that are not in compliance with the Rules Governing Public Water Systems (NCAC Title 15A, Subchapter 18C). These rules require a minimum line size of 2-inches and also limit the length of 2-inch lines to 1000 feet. Therefore, Phase 1 includes the replacement of all of the existing 1-inch water lines with 2-inch and/or 6-inch water lines and also the replacement of existing 2-inch lines with 6-inch lines to reduce the lengths of these sections of 2-inch line to less than or equal to 1000 feet. Approximately 6,500 linear feet of new 6-inch ductile iron water line and 3,675 linear feet of 2-inch PVC water line are proposed for installation in Phase 1. Also included in this first phase is the addition of Supervisory Control and Data Acquisition (SCADA) equipment at the storage tank and booster pump station to allow these facilities to communicate with each other thereby enabling the pump station to fill the tank automatically. The proposed SCADA equipment will also allow communication with the existing Town of Waynesville SCADA system.

The second phase is not as well defined as the first phase and generally includes the replacement of a portion of the remaining water system as needed to improve the overall condition of the system and its reliability. Phase 2 includes the replacement of 10% of the remaining 6-inch water lines and 50% of the remaining 2-inch water lines. The 6-inch lines would be replaced with new 6-inch ductile iron water lines and the 2-inch lines would be replaced with a combination of 2-inch PVC and 6-inch ductile iron water lines. Approximately 9,000 linear feet of 6-inch water line and 5,000 linear feet of 2-inch water line are proposed for installation in Phase 2. Also included in Phase 2 is a minor upgrade to the booster pump station to add variable frequency drives (VFDs) to the pumps. These will allow the pumps to ramp up and down which will reduce the sudden pressure surge that currently happens when the pumps are turned on at full speed.

B. Sewer System

Based on site visits and a review of the available mapping, the estimated total length of existing sewer lines is approximately fifteen (15) miles as scaled from aerial maps. According to the previous studies, the original sewer system dates back to the 1910's. Although there are some extensive hand drawn maps of the existing sewer system as to locations, we were provided with little information regarding the sewer pipes, such as size and material. Based on input from LJA staff, it has been assumed that much of the older portions of the system was constructed with 4-inch and 6-inch vitrified clay pipe (VCP) with brick manholes or no manholes, as was standard practice during this time period. Vitrified clay pipe has a tendency settle and break at the pipe joints, and brick manholes have a tendency to deteriorate over time, often significantly. For these reasons, it is recommended that additional video and field inspections be performed to gain a better understanding of the system and to refine the recommendations and priorities for rehabilitation and capital improvements. These inspections could be performed system wide all at once, or phased over multiple years covering a different portion of the system each year. There is also one (1) sewage lift station near the Tri-Vista condominiums which we understand from LJA staff serves primarily, possibly only, the condominiums. According to the LJA report, this lift station was severely damaged during a 2010 snowstorm and the grinder pumps and controls were replaced in 2011. This lift station appears to be in adequate condition and not in need of any immediate improvements.

The previously prepared reports identified several sewer line segments as "High Priority" for replacement. The existing sewer lines on Liberty Road and Kilgore Road are reportedly 4-inch diameter VCP with limited manholes and a large number of service taps, and are considered the highest priority for replacement with 8-inch diameter to meet current State regulations. The sewer lines on JB Ivey Road, Stuart Circle, Littleton Road and Glendale Drive are 4-inch and 6-inch diameter and also have limited manholes and a large number of service taps. Therefore, these sewer lines are also considered "high priority" for replacement and upgrades. Sewer lines identified in previous reports as "Medium" or "Low" priority include Weldon Way, Oxford Road, Cokesberry Circle, and Atkins Loop. These lines have excessive age and are undersized, and are recommended for replacement. Cost estimates for the replacement of all of these priority sewer lines identified in the previous report with 8-inch diameter sewer lines have been revised based on our opinions of probable cost. The minimum size for new sewer

lines allowed by current State regulations for a municipal sewer system is 8-inch diameter. Many of the existing sewer lines to be replaced will require pavement repairs and, due to the depth and locations of the sewer lines, it will often be preferable to overlay the entire road width with asphalt. It is noted that the preliminary cost estimates developed are significantly higher than those included in the previously prepared reports by LJA staff and their consultant. For sewer lines being replaced on streets identified as needing repairs, the asphalt repair and overlay costs have been included in the sewer system cost estimates and not in the street repair cost estimates.

C. Street System

The infrastructure assessment for the LJA street system utilized the *Strategic Pavement Survey* prepared by the Lake Junaluska Assembly Public Works department (Spring 2011) as a starting point for the condition of the existing roads. This LJA survey appears to be a fairly detailed review. The Town of Waynesville staff also requested that we determine which existing roads appear to meet the minimum width for Powell Bill funding (16-feet in width) and which roads could be brought into Powell Bill compliance fairly easily. There are many roads in the LJA area which do not meet the Powell Bill requirements and with constraints of topography and rights-of-way, cannot easily be brought up to standards. There are, however, many which are just under the 16-foot requirement and could be widened without much difficulty.

The LJA *Strategic Pavement Survey* included a field review of each street. Each street was rated as being in one of five categories based on the condition of the street. However, the streets in greatest need of repair fall into categories designated as either "Critical" or "Poor", as defined as follows in the LJA survey:

Critical Condition – Consistently rough ride, severe deterioration, frequent patching

Poor Condition – Clearly bumpy ride, above average deterioration, frequent patching

Streets that are in "Critical" condition would be considered the highest priority for repairs. These streets, as listed in the LJA survey, included Holston Village Road, Aldersgate Road, Hickory Hills Drive, North Lakeshore Drive, Weldon Way, Simplicity Drive, Sleepy Hollow Drive, Cokesberry Circle, Atkins Loop and Chapel Drive. Note that part of the street repair costs for Weldon Way, Cokesberry Circle, and Atkins Loop have been included in the sewer line replacement costs for these areas as appropriate.

Streets listed by the LJA survey as being in "Poor" condition include Tillman Drive, Oxford Road, Crum Drive (partial section), South Lakeshore Drive (partial section), Wells Road, Memory Lane, Ponder Lane, Mouzan Road, Liberty Road (partial section), and Sleepy Hollow Road (partial section). Note that part of the street repair costs for Liberty Road have been included in the sewer line replacement cost for this street as appropriate.

Based on scaling of available aerial maps, it is estimated that the total length of LJA streets is approximately 16.65 miles, not including State-maintained roads or road portions near the Conference Center that the LJA is likely to keep. Of the 16.65 miles of roads, approximately 9.4 miles appear to be greater than 16 feet wide and should be Powell Bill eligible.

Preliminary cost estimates were developed for all of the street improvements described above. In addition, estimates for a yearly amount of pavement repair and paving have been made. These estimates assume that some of the cracking and potholed sections will need subgrade repairs and additional stone in some locations, and that minor drainage pipe replacements will be necessary.

System Extension Plan (Yrs 1-5) - Replace undersized lines, pump station upgrade, SCADA Installation

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL
1	6" DIP (CL 350) Water Line	6,500	LF	\$45.00	\$292,500.00
2	2" PVC (SDR 13.5) Water Line	3,675	LF	\$25.00	\$91,875.00
3	6" Gate Valve and Box	15	EA	\$900.00	\$13,500.00
4	2" Gate Valve and Box	8	EA	\$800.00	\$6,400.00
5	Fire Hydrant Assembly	10	EA	\$3,200.00	\$32,000.00
6	Blow-off Assembly	3	EA	\$2,000.00	\$6,000.00
7	Air Release Valve	2	EA	\$2,000.00	\$4,000.00
8	Compact D.I. Fittings	2,500	LBS	\$2.00	\$5,000.00
9	Pavement Repair	2,300	LF	\$35.00	\$80,500.00
10	Rock Excavation	650	CY	\$100.00	\$65,000.00
11	Select Backfill	650	CY	\$25.00	\$16,250.00
12	Miscellaneous Sewer Line Replacement at Water Line Crossings	1	LS	\$5,000.00	\$5,000.00
13	Connect to Existing Meter Service	200	EA	\$850.00	\$170,000.00
14	Tie to Existing Water Line	20	EA	\$2,500.00	\$50,000.00
15	SCADA Addition at Pump Station and Storage Tank	1	LS	\$30,000.00	\$30,000.00
Sub-Total					\$868,025.00
10% Contingency					\$86,803.00
Design and Permitting					\$86,803.00
Bidding and Award					\$10,000.00
Construction Administration					\$69,442.00
Materials Testing					\$5,000.00
Total					\$1,126,073.00

Meter Replacement Program	QTY	UNIT	UNIT PRICE	TOTAL
	261	EA	\$500.00	\$130,500.00

System Upgrades (Yrs 6-10) Replace percentage of remaining system piping

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL
1	6" DIP (CL 350) Water Line	9,000	LF	\$45.00	\$405,000.00
2	2" PVC (SDR 13.5) Water Line	5,000	LF	\$25.00	\$125,000.00
3	6" Gate Valve and Box	40	EA	\$900.00	\$36,000.00
4	2" Gate Valve and Box	20	EA	\$800.00	\$16,000.00
5	Fire Hydrant Assembly	40	EA	\$3,200.00	\$128,000.00
6	Blow-off Assembly	4	EA	\$2,000.00	\$8,000.00
7	Air Release Valve	4	EA	\$2,000.00	\$8,000.00
8	Pavement Repair	3,150	LF	\$35.00	\$110,250.00
9	Rock Excavation	800	CY	\$100.00	\$80,000.00
10	Select Backfill	800	CY	\$25.00	\$20,000.00
11	Connect to Existing Meter Service	630	EA	\$850.00	\$535,500.00
12	Install VFDs on Booster Pumps	1	LS	\$10,000.00	\$10,000.00
Sub-Total					\$1,481,750.00
10% Contingency					\$148,175.00
Design and Permitting					\$148,175.00
Bidding and Award					\$10,000.00
Construction Administration					\$118,540.00
Materials Testing					\$10,000.00
Total					\$1,916,640.00

LJA Water System Improvements
10 Year CIP

Project	YEAR										TOTAL	
	1	2	3	4	5	6	7	8	9	10		
System Extension Plan	\$225,215	\$225,215	\$225,215	\$225,215	\$225,215							\$1,126,073
Meter Replacement Program			\$16,313	\$16,313	\$16,313	\$16,313	\$16,313	\$16,313	\$16,313	\$16,313	\$16,313	\$130,500
System Upgrades						\$383,328	\$383,328	\$383,328	\$383,328	\$383,328	\$383,328	\$1,916,640
Total	\$225,215	\$225,215	\$241,527	\$241,527	\$241,527	\$399,641	\$399,641	\$399,641	\$399,641	\$399,641	\$399,641	\$3,173,213

System Extension Plan Improvements:

Replace all 1" water lines with 2" and 6" water line
 Replace sufficient length of existing 2" lines with 6" lines to reduce 2" lines to 1000 LF max
 Install RTUs at storage tank and pump station to tie to Waynesville SCADA system

Assumptions:

New 2" water lines will be placed in the road shoulder; 35% of new 6" will be installed within the roadway
 Pavement repair for water lines installed in roadway will consist of repaving the water line trench and does not include overlay
 50% of line work will require rock excavation
 Approximately 200 of 661 meters will be replaced as part of the System Extension Plan via service reconnections
 and 200 recently replaced meters will not be replaced within the 10 year window

Meter Replacement Program:

Replace 261 meters with AMR units from year 3 to year 10

System Upgrade Improvements:

Replace 10% of existing 6" line with new 6" line; Total existing 6" line approx. 40,000 LF per LJA mapping
 Replace 50% of remaining 2" line with new water line (50% with new 2", 50% with new 6"); Total 2" line approx. 24,000 LF per LJA mapping
 Install VFDs on booster pump station pumps

Assumptions:

New 2" water lines will be placed in the road shoulder; 35% of new 6" will be installed within the roadway
 Pavement repair for water lines installed in roadway will consist of repaving the water line trench and does not include overlay
 50% of line work will require rock excavation

**TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
SEWER SYSTEM IMPROVEMENTS
COST ESTIMATE - JUNE 2015**

PHASE 1 - HIGH PRIORITY SEWER LINE REPLACEMENTS*

Liberty Road and Kilgore Road - existing 4" VCP sewer line with limited manholes and large number of taps

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION	
1	Mobilization		LS		\$12,541	
2	8" SDR 35 PVC Sanitary Sewer (All Depths)	2,500	LF	\$65	\$162,500	
3	8" DIP Sanitary Sewer (All Depths)	200	LF	\$75	\$15,000	
4	4' Dia. Manholes - Standard	22	EA	\$2,400	\$52,800	
5	Sanitary Sewer Service Taps	36	EA	\$1,200	\$43,200	
6	4" Sewer Service Pipe	260	LF	\$20	\$5,200	
7	Connection to Existing Manhole and Rebuild Invert	2	EA	\$1,500	\$3,000	
8	15" CMP	80	LF	\$50	\$4,000	
9	Asphalt repair - excluding overlay	2,600	LF	\$75	\$195,000	
10	2" Type I-2 Bituminous Surface Course Overlay	2,800	SY	\$25	\$70,000	
11	CABC (Shoulders and Drives)	100	TONS	\$25	\$2,500	
12	Asphalt Drive Repair	120	LF	\$30	\$3,600	
13	Concrete Drive Repair	50	LF	\$50	\$2,500	
14	Gravel Drive Repair	50	LF	\$15	\$750	
15	Misc. Concrete	10	CY	\$100	\$1,000	
16	Washed Stone undercut	500	LF	\$3	\$1,500	
17	Rock Excavation	100	CY	\$60	\$6,000	
18	Select Backfill	500	CY	\$20	\$10,000	
19	Silt Fence	1,500	LF	\$4	\$6,000	
20	Culvert or Inlet protection	10	EA	\$150	\$1,500	
TOTAL FOR ITEMS 1-20 INCLUSIVE					\$598,591.00	
					20% Contingency	\$119,718
					Design and permitting	\$59,859
					Bidding and Award	\$10,000
					Construction Administration	\$47,898
					Materials Testing	\$5,000
TOTAL COSTS					\$841,066.00	

JB Ivey Road and Stuart Circle - 4" and 6" lines with limited manholes and large number of taps

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Mobilization		LS		\$12,399
2	8" SDR 35 PVC Sanitary Sewer (All Depths)	1,500	LF	\$65	\$97,500
3	8" DIP Sanitary Sewer (All Depths)	400	LF	\$75	\$30,000
4	4' Dia. Manholes - Standard	14	EA	\$2,400	\$33,600
5	Sanitary Sewer Service Taps	25	EA	\$1,200	\$30,000
6	4" Sewer Service Pipe	250	LF	\$20	\$5,000
7	Connection to Existing Manhole and Rebuild Invert	1	EA	\$1,500	\$1,500
8	15" CMP	60	LF	\$50	\$3,000
9	Asphalt repair - excluding overlay	1,500	LF	\$75	\$112,500
10	2" Type I-2 Bituminous Surface Course Overlay	3,000	SY	\$25	\$75,000
11	CABC (Shoulders and Drives)	100	TONS	\$25	\$2,500
12	Asphalt Drive Repair	100	LF	\$30	\$3,000
13	Concrete Drive Repair	50	LF	\$50	\$2,500
14	Gravel Drive Repair	50	LF	\$15	\$750
15	Misc. Concrete	10	CY	\$100	\$1,000
16	Washed Stone undercut	250	LF	\$3	\$750
17	Rock Excavation	50	CY	\$60	\$3,000
18	Select Backfill	300	CY	\$20	\$6,000
19	Silt Fence	1,200	LF	\$4	\$4,800
20	Culvert or Inlet protection	6	EA	\$150	\$900
TOTAL FOR ITEMS 1-20 INCLUSIVE					\$425,699.00
20% Contingency					\$85,140
Design and permitting					\$42,569
Bidding and Award					\$8,000
Construction Administration					\$34,056
Materials Testing					\$2,500
TOTAL COSTS					\$597,964.00

Littleton Road and Glendale Drive - 4" and 6" lines with limited manholes and large number of taps

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Mobilization		LS		\$7,360
2	8" SDR 35 PVC Sanitary Sewer (All Depths)	900	LF	\$65	\$58,500
3	8" DIP Sanitary Sewer (All Depths)	200	LF	\$75	\$15,000
4	4' Dia. Manholes - Standard	8	EA	\$2,400	\$19,200
5	Sanitary Sewer Service Taps	25	EA	\$1,200	\$30,000
6	4" Sewer Service Pipe	250	LF	\$20	\$5,000
7	Connection to Existing Manhole and Rebuild Invert	2	EA	\$1,500	\$3,000
8	15" CMP	80	LF	\$50	\$4,000
9	Asphalt repair - excluding overlay	750	LF	\$75	\$56,250
10	2" Type I-2 Bituminous Surface Course Overlay	1,500	SY	\$25	\$37,500
11	CABC (Shoulders and Drives)	50	TONS	\$25	\$1,250
12	Asphalt Drive Repair	75	LF	\$30	\$2,250
13	Concrete Drive Repair	10	LF	\$50	\$500
14	Gravel Drive Repair	30	LF	\$15	\$450
15	Misc. Concrete	10	CY	\$100	\$1,000
16	Washed Stone undercut	250	LF	\$3	\$750
17	Rock Excavation	25	CY	\$60	\$1,500
18	Select Backfill	250	CY	\$20	\$5,000
19	Silt Fence	750	LF	\$4	\$3,000
20	Culvert or Inlet protection	8	EA	\$150	\$1,200
TOTAL FOR ITEMS 1-20 INCLUSIVE					\$252,710.00
20% Contingency					\$50,542
Design and permitting					\$25,271
Bidding and Award					\$7,000
Construction Administration					\$20,216
Materials Testing					\$2,000
TOTAL COSTS					\$357,739.00

* SEWER LINE PRIORITIES ESTABLISHED BY WATER AND SEWER CAPITAL IMPROVEMENTS PLAN - 10-YEAR OUTLAY, MAY 1, 2012 BY CAVANAUGH ASSOCIATES

**TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
SEWER SYSTEM IMPROVEMENTS
COST ESTIMATE - JUNE 2015**

PHASE 2 - MEDIUM PRIORITY SEWER LINE REPLACEMENTS*

Weldon Way - aged and undersized sewer lines

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION	
1	Mobilization				\$6,212	
2	8" SDR 35 PVC Sanitary Sewer (All Depths)	1,200	LF	\$65	\$78,000	
3	8" DIP Sanitary Sewer (All Depths)	400	LF	\$75	\$30,000	
4	4' Dia. Manholes - Standard	5	EA	\$2,400	\$12,000	
5	Sanitary Sewer Service Taps	6	EA	\$1,200	\$7,200	
6	4" Sewer Service Pipe	60	LF	\$20	\$1,200	
7	Connection to Existing Manhole and Rebuild Invert	1	EA	\$1,500	\$1,500	
8	15" CMP	40	LF	\$50	\$2,000	
9	Asphalt repair - excluding overlay	500	LF	\$75	\$37,500	
10	2" Type I-2 Bituminous Surface Course Overlay	1,000	SY	\$25	\$25,000	
11	CABC (Shoulders and Drives)	50	TONS	\$25	\$1,250	
12	Asphalt Drive Repair	50	LF	\$30	\$1,500	
13	Concrete Drive Repair	20	LF	\$50	\$1,000	
14	Gravel Drive Repair	25	LF	\$15	\$375	
15	Misc. Concrete	5	CY	\$100	\$500	
16	Washed Stone undercut	500	LF	\$3	\$1,500	
17	Rock Excavation	50	CY	\$60	\$3,000	
18	Select Backfill	100	CY	\$20	\$2,000	
19	Silt Fence	200	LF	\$4	\$800	
20	Culvert or Inlet protection	5	EA	\$150	\$750	
TOTAL FOR ITEMS 1-20 INCLUSIVE					\$213,287.00	
					20% Contingency	\$42,657
					Design and permitting	\$21,328
					Bidding and Award	\$7,000
					Construction Administration	\$17,063
					Materials Testing	\$1,500
TOTAL COSTS					\$302,835.00	

Oxford Road and Cokesberry Circle- aged and undersized sewer lines with limited manholes and large number of taps

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Mobilization				\$14,518
2	8" SDR 35 PVC Sanitary Sewer (All Depths)	2,800	LF	\$65	\$182,000
3	8" DIP Sanitary Sewer (All Depths)	400	LF	\$75	\$30,000
4	4' Dia. Manholes - Standard	15	EA	\$2,400	\$36,000
5	Sanitary Sewer Service Taps	38	EA	\$1,200	\$45,600
6	4" Sewer Service Pipe	400	LF	\$20	\$8,000
7	Connection to Existing Manhole and Rebuild Invert	2	EA	\$1,500	\$3,000
8	15" CMP	120	LF	\$50	\$6,000
9	Asphalt repair - excluding overlay	1,300	LF	\$75	\$97,500
10	2" Type I-2 Bituminous Surface Course Overlay	2,150	SY	\$25	\$53,750
11	CABC (Shoulders and Drives)	50	TONS	\$25	\$1,250
12	Asphalt Drive Repair	75	LF	\$30	\$2,250
13	Concrete Drive Repair	35	LF	\$50	\$1,750
14	Gravel Drive Repair	50	LF	\$15	\$750
15	Misc. Concrete	10	CY	\$100	\$1,000
16	Washed Stone undercut	700	LF	\$3	\$2,100
17	Rock Excavation	25	CY	\$60	\$1,500
18	Select Backfill	100	CY	\$20	\$2,000
19	Silt Fence	2,000	LF	\$4	\$8,000
20	Culvert or Inlet protection	10	EA	\$150	\$1,500
TOTAL FOR ITEMS 1-20 INCLUSIVE					\$498,468.00
20% Contingency					\$99,693
Design and permitting					\$49,846
Bidding and Award					\$10,000
Construction Administration					\$39,877
Materials Testing					\$2,000
TOTAL COSTS					\$699,884.00

Atkins Loop - aged and undersized sewer lines with limited manholes and large number of taps

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Mobilization				\$10,296
2	8" SDR 35 PVC Sanitary Sewer (All Depths)	2,000	LF	\$65	\$130,000
3	8" DIP Sanitary Sewer (All Depths)	200	LF	\$75	\$15,000
4	4' Dia. Manholes - Standard	10	EA	\$2,400	\$24,000
5	Sanitary Sewer Service Taps	12	EA	\$1,200	\$14,400
6	4" Sewer Service Pipe	120	LF	\$20	\$2,400
7	Connection to Existing Manhole and Rebuild Invert	1	EA	\$1,500	\$1,500
8	15" CMP	80	LF	\$50	\$4,000
9	Asphalt repair - excluding overlay	1,200	LF	\$75	\$90,000
10	2" Type I-2 Bituminous Surface Course Overlay	1,800	SY	\$25	\$45,000
11	CABC (Shoulders and Drives)	20	TONS	\$25	\$500
12	Asphalt Drive Repair	50	LF	\$30	\$1,500
13	Concrete Drive Repair	20	LF	\$50	\$1,000
14	Gravel Drive Repair	20	LF	\$15	\$300
15	Misc. Concrete	10	CY	\$100	\$1,000
16	Washed Stone undercut	200	LF	\$3	\$600
17	Rock Excavation	25	CY	\$60	\$1,500
18	Select Backfill	50	CY	\$20	\$1,000
19	Silt Fence	2,000	LF	\$4	\$8,000
20	Culvert or Inlet protection	10	EA	\$150	\$1,500
TOTAL FOR ITEMS 1-20 INCLUSIVE					\$353,496.00
20% Contingency					\$70,699
Design and permitting					\$35,350
Bidding and Award					\$8,000
Construction Administration					\$28,280
Materials Testing					\$2,000
TOTAL COSTS					\$497,825.00

* SEWER LINE PRIORITIES ESTABLISHED BY WATER AND SEWER CAPITAL IMPROVEMENTS PLAN - 10-YEAR OUTLAY, MAY 1, 2012 BY CAVANAUGH ASSOCIATES

**TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
SEWER SYSTEM IMPROVEMENTS
COST ESTIMATE - JUNE 2015**

MAINTENANCE AND BUDGET COST*

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Annual video budget on older sewer lines	5,000	LF	\$6	\$30,000
2	Point repair budget for problem areas	10	EA	\$6,000	\$60,000
3	Manhole rehabilitation or replacement	10	EA	\$2,000	\$20,000
4	Asphalt repair - excluding overlay	200	LF	\$75	\$15,000
5	2" Type I-2 Bituminous Surface Course Overlay	400	SY	\$25	\$10,000
6	CABC (Shoulders and Drives)	10	TONS	\$25	\$250
TOTAL FOR ITEMS 1-19 INCLUSIVE					\$135,250.00

* Recommend annual budget for video line inspection of select sections based on work orders for repair and overflow issues.
Excludes recently rehabilitated large diameter sewer lines in the lake edge.

**TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
ROAD IMPROVEMENTS
COST ESTIMATE - JANUARY 2013**

REPAIR OF ROADS IN CRITICAL CONDITION*

HOLSTON VILLAGE ROAD

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	1,300	SY	\$50	\$65,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	450	SY	\$35	\$15,750
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	3,778	SY	\$20	\$75,560
4	18" CMP	200	LF	\$40	\$8,000
TOTAL					\$164,310.00

ALDERSGATE ROAD

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	850	SY	\$50	\$42,500
2	Undercut stone base, add additional 8" stone base as needed and proofroll	250	SY	\$35	\$8,750
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	2,355	SY	\$20	\$47,100
4	18" CMP	120	LF	\$40	\$4,800
TOTAL					\$103,150.00

HICKORY HILLS DRIVE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	2,400	SY	\$50	\$120,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	800	SY	\$35	\$28,000
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	6,700	SY	\$20	\$134,000
4	18" CMP	400	LF	\$40	\$16,000
TOTAL					\$298,000.00

NORTH LAKESHORE DRIVE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	5,000	SY	\$50	\$250,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	1,400	SY	\$35	\$49,000
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	14,250	SY	\$20	\$285,000
4	18" CMP	500	LF	\$40	\$20,000
TOTAL					\$604,000.00

WELDON WAY*

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	650	SY	\$50	\$32,500
2	Undercut stone base, add additional 8" stone base as needed and proofroll	200	SY	\$35	\$7,000
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	880	SY	\$20	\$17,600
4	18" CMP	100	LF	\$40	\$4,000
TOTAL					\$61,100.00

* PAVEMENT REPAIRS REDUCED BY AMOUNT OF PAVEMENT REPAIR IN SEWER LINE PROJECT

SIMPLICITY / SLEEPY HOLLOW DRIVE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	950	SY	\$50	\$47,500
2	Undercut stone base, add additional 8" stone base as needed and proofroll	300	SY	\$35	\$10,500
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	2,750	SY	\$20	\$55,000
4	18" CMP	160	LF	\$40	\$6,400
TOTAL					\$119,400.00

COKESBERRY CIRCLE*

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	500	SY	\$50	\$25,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	250	SY	\$35	\$8,750
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	1,280	SY	\$20	\$25,600
4	18" CMP	240	LF	\$40	\$9,600
TOTAL					\$68,950.00

* PAVEMENT REPAIRS REDUCED BY AMOUNT OF PAVEMENT REPAIR IN SEWER LINE PROJECT

ATKINS LOOP*

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	865	SY	\$50	\$43,250
2	Undercut stone base, add additional 8" stone base as needed and proofroll	300	SY	\$35	\$10,500
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	1,465	SY	\$20	\$29,300
4	18" CMP	160	LF	\$40	\$6,400
TOTAL					\$89,450.00

* PAVEMENT REPAIRS REDUCED BY AMOUNT OF PAVEMENT REPAIR IN SEWER LINE PROJECT

CHAPEL DRIVE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	930	SY	\$50	\$46,500
2	Undercut stone base, add additional 8" stone base as needed and proofroll	300	SY	\$35	\$10,500
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	2,464	SY	\$20	\$49,280
4	18" CMP	160	LF	\$40	\$6,400
TOTAL					\$112,680.00

* PAVEMENT DESIGNATIONS AND CONDITIONS PER LAKE
JUNALUSKA ASSEMBLY PUBLIC WORKS,
STRATEGIC PAVEMENT SURVEY, SPRING 2011

**TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
ROAD IMPROVEMENTS
COST ESTIMATE - JANUARY 2013**

REPAIR OF ROADS IN POOR CONDITION*

TILLMAN DRIVE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	980	SY	\$50	\$49,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	350	SY	\$35	\$12,250
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	2,800	SY	\$20	\$56,000
4	18" CMP	280	LF	\$40	\$11,200
TOTAL					\$128,450.00

OXFORD ROAD

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	2,000	SY	\$50	\$100,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	600	SY	\$35	\$21,000
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	5,700	SY	\$20	\$114,000
4	18" CMP	320	LF	\$40	\$12,800
TOTAL					\$247,800.00

CRUM DRIVE (SECTION)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	1,650	SY	\$50	\$82,500
2	Undercut stone base, add additional 8" stone base as needed and proofroll	550	SY	\$35	\$19,250
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	4,700	SY	\$20	\$94,000
4	18" CMP	260	LF	\$40	\$10,400
TOTAL					\$206,150.00

SOUTH LAKESHORE DRIVE (SECTION)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	350	SY	\$50	\$17,500
2	Undercut stone base, add additional 8" stone base as needed and proofroll	100	SY	\$35	\$3,500
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	1,000	SY	\$20	\$20,000
4	18" CMP	100	LF	\$40	\$4,000
TOTAL					\$45,000.00

WELLS ROAD

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	420	SY	\$50	\$21,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	150	SY	\$35	\$5,250
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	1,200	SY	\$20	\$24,000
4	18" CMP	80	LF	\$40	\$3,200
TOTAL					\$53,450.00

MEMORY LANE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	280	SY	\$50	\$14,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	75	SY	\$35	\$2,625
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	800	SY	\$20	\$16,000
4	18" CMP	80	LF	\$40	\$3,200
TOTAL					\$35,825.00

PONDER LANE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	175	SY	\$50	\$8,750
2	Undercut stone base, add additional 8" stone base as needed and proofroll	50	SY	\$35	\$1,750
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	500	SY	\$20	\$10,000
4	18" CMP	40	LF	\$40	\$1,600
TOTAL					\$22,100.00

*MOUZAN ROAD AND LIBERTY ROAD (SECTION)**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	1,575	SY	\$50	\$78,750
2	Undercut stone base, add additional 8" stone base as needed and proofroll	500	SY	\$35	\$17,500
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	1,700	SY	\$20	\$34,000
4	18" CMP	260	LF	\$40	\$10,400
TOTAL					\$140,650.00

* PAVEMENT REPAIRS REDUCED BY AMOUNT OF PAVEMENT REPAIR IN SEWER LINE PROJECT

SLEEPY HOLLOW (SECTION)

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	840	SY	\$50	\$42,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	250	SY	\$35	\$8,750
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	2,400	SY	\$20	\$48,000
4	18" CMP	140	LF	\$40	\$5,600
TOTAL					\$104,350.00

* PAVEMENT DESIGNATIONS AND CONDITIONS PER LAKE
JUNALUSKA ASSEMBLY PUBLIC WORKS,
STRATEGIC PAVEMENT SURVEY, SPRING 2011

**TOWN OF WAYNESVILLE
LAKE JUNALUSKA ASSEMBLY ANNEXATION
ROAD IMPROVEMENTS
COST ESTIMATE - JANUARY 2013**

GENERAL ROAD REPAIR - ANNUAL COST

COSTS FOR SPOT REPAIR OF POOR ROAD SECTIONS, INCLUDING STONE PROOFROLLING, UNDERCUT AND STONE REPLACEMENT AND PAVING.

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	EXTENSION
1	Pavement repair, including removal of old asphalt, and proofrolling stone base	1,000	SY	\$50	\$50,000
2	Undercut stone base, add additional 8" stone base as needed and proofroll	250	SY	\$35	\$8,750
3	Asphalt Surface Course (Type S 9.5A - 2" Thickness)	2,000	SY	\$20	\$40,000
4	18" CMP	60	LF	\$40	\$2,400
TOTAL					\$101,150.00