January 14, 2018

This report is a summary of the methodology used to determine the 2018 major street maintenance for the City of Burlington.

Basic assumptions for major maintenance work type are based on the pavement management study performed in 2011. Recommended maintenance schedule is based on the type of pavement as shown in the following table.

Pavement Type	**Recommended Maintenance**
Concrete	Replace failed sections as needed, usually pavement rating of 4 or less.
Hot Mix	Overlay at pavement condition 5 (12 year average), chip seal if overlay cannot be scheduled due to budget issues, crack seal on 3 year interval.
Chip Seal +2	Overlay at pavement condition 5 (8 year average), chip seal only if overlay cannot be scheduled due to budget issues.
Chip Seal	Chip Seal at 5 year interval. Overlay when funds are available.

Reconstruction of Chip Seal Streets: In 2011 it was estimated that approximately 10 miles of chip seal streets were in such poor shape that they needed to be reconstructed. Some of those streets were rehabilitated with heavy patching or an overlay. Beginning in 2012 about 1 mile per year has been milled up and base added or completely reconstructed. The 2018 planned reconstruction will wrap up most of the chip seal street upgrades. 2018 is the last year where there is major emphasis in reconstruction. There will always be a few streets that need reconstruction for one reason or another, but the major asphalt emphasis will shift to preservation and improving the pavement structure to reduce long term maintenance costs.

Concrete Streets: There are a number of concrete streets that need work. The current emphasis is to reconstruct as many blocks of poor chip seal streets as possible. Many blocks of chip seal street can be upgraded for the cost of reconstructing one concrete street. When the poor chip seal streets have mostly been eliminated emphasis will shift to repairing the concrete streets. The shift of emphasis should occur in 2019.

Selection Procedure: A listing of candidate asphalt streets was developed by filtering the street inventory to determine those streets that were overdue for maintenance. Then each candidate street was field reviewed to determine if the streets needed work and what work was needed. The computer filter and field review provide the optimum work based on the available budget. The results for 2018 and the comparison with previous years is shown in the following table.

	YEARLY WORK RECORD						
	2012	**2013**	**2014**	**2015**	**2016**	**2017**	**2018 Planned**
Chip	22433	0	7606	6165	14036	0	6868
RC	0	956	1284	768	1108	3218	2721
OL2	13662	14330	16957	8384	13205	13791	1685
OL5	0	0	3474	4141	768	0	3620
B	4365	6579	2788	5801	6244	0	0

Annual street work since 2011 has emphasized more overlays and base work. This has resulted in a thicker pavement structure which in the long run will reduce maintenance costs. The improvement in pavement types is shown in the following table.

Pavement Type	**2011 Length (Ft.)**	**2014 Length (Ft.)**	**2017 Length (Ft.)**
Concrete	11,614	11,614.0	11,614
Hot mix asphalt (4+" thick)	39,893	62,360	69,659
Chip Seal w/2" overlay	39,468	38,012	69,755
Chip Seal over base	3,903	8,793	1,793
Chip seal	68,424	48,083	16,464
Rock	19,087	17,800	17,367

Detailed listing of planned 2018 work is shown in the following tables:

Reconstruction-Tensar & Rock Base

Sec No.	**Street Name**	**From**	**To**	**Length**	**Width**
1026	Free State Ct	Cul	12th St	250	30
3029	Burlingwood Ct	Kennedy St	Cul	331	25
1196	Cumberland St	10th St	11th St	420	23
1204	Merrimac St	10th St	11th St	420	28
1211	Penobscot St	10th St	11th St	420	28
1225	Ecord St	U.S. 75	6th St	534	22
2067	6th St	End	Ecord St	492	18
2086	Willett St	Sanders St	Garrettson St	435	26
			Total	**2721**	

Paving (5" on existing rock base)

Sec No.	**Street Name**	**From**	**To**	**Length**	**Width**
1017	Kennedy St	U.S. 75	Wilson St	402	24
1213	Penobscot St	12th St	13th St	436	24
1214	Penobscot St	13th St	14th St	443	24
2075	7th St	Hudson St	Neosho St	343	24
2090	8th St	Hudson St	Neosho St	343	24

2097	8th St	Alleghany St	Cumberland St	300	24
2098	8th St	Cumberland St	Kansas St.	344	24
2181	14th St	Hudson St	Neosho St	343	24
2186	14th St	Yuba St	Potomac St	325	24
2187	14th St	Potomac St	Alleghany St	341	24
			Total	**3620**	

2" Overlays

Sec No.	Street Name	From	To	Length	Width
2093	8th St	Niagara St	St. Lawrence St.	335	22
2094	8th St	St. Lawrence St.	Yuba St	343	21
2095	8th St	Yuba St	Potomac St	325	22
2096	8th St	Potomac St	Alleghany St	341	23
2145	11th St	Potomac St	Alleghany St	341	23
			Total	**1685**	

Chip Seal

Sec No.	Street Name	From	To	Length	Width
1044	Garrettson St	Willett St	Osborne St	457	27
1045	Garrettson St	Osborne St	Cleveland St	424	26
1069	Lamoille St	3rd St	U.S. 75	408	22
1120	Des Moines St	U.S. 75	5th St	412	33
1121	Des Moines St	5th St	6th St	442	32
1155	Yuba St	U.S. 75	5th St	412	25
1156	Yuba St	5th St	6th St	442	18
1193	Cumberland St	6th St	7th St	443	20
1194	Cumberland St	7th St	8th St	431	19
2039	5th St	Neosho St	Des Moines St	350	35
2048	Jarboe St	Cross St	Martindale St	432	25
2049	Jarboe St	Martindale St	Kennedy St	451	25
2050	Jarboe St	Kennedy St	Sanders St	448	25
2051	Jarboe St	Sanders St	Garrettson St	435	25
2052	Jarboe St	Garrettson St	Conger Ave	461	25
2053	Jarboe St	Conger Ave	Kennebec St	420	25
			Total	**6868**	

Preliminary Totals from above:

2018 Work	Length	Cost/Ft	Extension
5" paving	3,620	56	$203,000
2" OL	1,685	20	$34,000
Chip Seal	6,868	5	$34,000
Reconstruct	2,721	30	$81,00
		Total	**$352,000**

Concrete street not included above.

Notes

Reconstruction is just material cost of rock and tensar.

Paving based on $66 per ton for 5" paving, includes $3 s.y. milling

Potential work not included above:

Curbs on 10th & 11th St.: 2000 ft. at $25 $50,00

Engineering for 10th, 11th, and Burlingwood: $35,000

Burlingwood Reconstruction: ???