



City of Afton

**Public Works Committee Meeting
Tuesday, February 21, 2017
9:00 A. M.**

Agenda

- 1. Call to Order**
- 2. Committee Business**
 - A. 2017 Street Improvements Project
 - B. Engineering Fees for the 2017 Street Improvements Project
 - C. 30th Street Culvert Repair
- 3. Adjournment**

City of Afton
3033 St. Croix Trl, P.O. Box 219
Afton, MN 55001

Meeting Date: Feb. 21, 2017

Public Works Committee

To: Public Works Committee Members
 From: Ron Moorese, City Administrator
 Date: February 16, 2017
 Re: 2017 Street Improvement Project

Project Scope

At its February 2, 2017 meeting, the Public Works Committee discussed the scope and priorities of the 2017 Street Improvements Project, as well as estimated costs. These topics were further discussed at a meeting at the WSB offices on February 9. Based on those discussions, WSB has developed the following project scope for the project bidding. This information will be further updated for the Public Works Committee meeting. A goal of the meeting is to clarify the scope estimated costs for review by the Council.

Original Base Bid

Reclamation:

15th Street (Neal – Stagecoach) – 2.2 miles
 30th Street (Trading Post – 300' w/o Nybeck) – 0.7 miles
 Indian Trail (Hudson – Stagecoach) – 2.5 miles
 42nd (Trading Post – End of Curb, n/o driveway of 15115) - .7 miles
 Nybeck (30th – Oakgreen Cr) 0.6 miles
 Trading Post (40th – 60th) 2.5 miles (includes section of gravel road)

Mill and Overlay:

Oakgreen Ave (Oakgreen Cr - 40th) 0.3 miles
 42nd (Beg of Curb, n/o driveway at 15115 – Pasture Ridge) 0.4 miles

Current Proposed Base Bid also Includes

30th St (Neal – 300' w/o Nybeck) – Reclamation – 0.9 miles
 34th, Norsted, 33rd - Reclamation – 0.85 miles

Alternates

Alt 1: Tomahawk Dr (Indian Trl – Circle) – Mill and Overlay – 0.25 miles
 Pasture Ridge (42nd – 45th), 45th (Pasture Ridge – St. Croix Trl) – M & O – 0.55
 miles
Alt 2: Oakgreen Circle – Mill and Overlay – 1.15 miles
Alt 3: Odell Ave S (Trading Post – 50th) – Reclamation – 0.9 miles

Total: 14.5 miles

Project Funding

At its December 20, 2016 meeting, the Council authorized staff to move forward with the process for a \$3 million General Obligation Abatement Bond issue to finance the 2017 Street Improvements Project. At the January 12, 2017 Special City Council meeting, in response to suggestions to add more streets to the 2017 Street Improvements Project, Council member Nelson suggested the Council consider increasing the amount of the bond issue to \$3.5 million. Council member Ross has also prepared the attached spreadsheet that shows a \$3.5 million bond issue could be funded with the same tax levy as the \$3 million bond issue. More recently, there has been discussion regarding using a portion of the bond proceeds to fund, on at least a temporary basis, the paving of the portion of 60th Street between Trading Post Trail and Neal Avenue. As the Public Works Committee clarifies the project scope and costs, this will enable the Committee to discuss the necessary size of the bond issue.

Engineering Costs

The City has approved a proposal from WSB for preparing plans and specifications. This includes surveying the roads to provide topography and to enable the centerline of the road to be staked during construction. The survey also provides the topographic information required by the Valley Branch Watershed District for their permitting process related to culvert replacements.

The other element of engineering costs is construction inspection, which also includes tracking material quantities and materials testing. WSB has not provided a proposal for construction inspection services, but recommended some level of tracking quantities, materials testing and construction inspection, with the amount being dependent on the quality of the low-bid contractor. WSB was requested to provide a proposal with a range of levels of services, with information regarding the pros and cons of each level of service, so that the City can select the level it prefers.

Designed By: Stan Ross

BONDING + CASH

LAST UPDATE: 01.12.17

Bond Amount = **\$3,500,000**

Bond Duration (years) = **10**

Bond Rate (%) = **2.0%**

2017 PFA One Time Adjust = **\$200,000**

										Reclamation (25 year life)		Mill & Overlay (10 - 15 year life)		Micro Surfacing / Thin Overlay (Extends life by 25 years)		Crack Seal		X	
Year	Year Number	Yearly Allocation (includes Budget Increases)	Periodic Adjustment Notes	Dollar Amount Increase based on %	Annual % Road Budget Increase		Annual Projected Cost	Bond Annual Cost (P&I)	Balance After Expense	Distance (Miles)	Cost	Distance (miles)	Cost	Distance (miles)	Cost	Distance (miles)	Cost	Year	Year Number
2016	1	\$145,000					\$0		145,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	2016	1
2017	2	\$275,800	\$25,000	\$150,800	104%		\$3,726,112	\$389,643	5,045	6.8	\$2,460,640	5.1	\$1,265,472	0.0	\$0	0.0	\$0	2017	2
2018	3	\$577,490	\$150,000	\$151,690	55%		\$0	\$389,643	192,892	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	2018	3
2019	4	\$652,564		\$75,074	13%		\$404,951	\$389,643	50,862	0.0	\$0	1.5	\$404,951	0.0	\$0	0.0	\$0	2019	4
2020	5	\$724,346		\$71,782	11%		\$421,149	\$389,643	-35,584	0.0	\$0	1.5	\$421,149	0.0	\$0	0.0	\$0	2020	5
2021	6	\$796,780		\$72,435	10%		\$291,997	\$389,643	79,557	0.0	\$0	1.0	\$291,997	0.0	\$0	0.0	\$0	2021	6
2022	7	\$955,523	\$95,000	\$63,742	8%		\$621,246	\$389,643	24,190	0.0	\$0	1.8	\$531,434	0.0	\$0	11.8	\$89,812	2022	7
2023	8	\$1,003,299		\$47,776	5%		\$631,647	\$389,643	6,199	0.0	\$0	2.0	\$631,647	0.0	\$0	0.0	\$0	2023	8
2024	9	\$1,053,464		\$50,165	5%		\$422,888	\$389,643	247,132	0.0	\$0	1.3	\$410,571	0.0	\$0	1.5	\$12,317	2024	9
2025	10	\$1,106,137		\$52,673	5%		\$866,797	\$389,643	96,829	0.0	\$0	0.0	\$0	5.0	\$853,987	1.5	\$12,810	2025	10
2026	11	\$1,161,444		\$55,307	5%		\$719,399	\$389,643	149,231	0.0	\$0	0.0	\$0	4.0	\$710,517	1.0	\$8,881	2026	11
2027	12	\$1,479,516	\$260,000	\$58,072	5%		\$1,603,311	\$0	25,437	0.0	\$0	0.0	\$0	8.0	\$1,477,876	13.6	\$125,435	2027	12
2028	13	\$1,553,492		\$73,976	5%		\$1,198,853	\$0	380,076	0.0	\$0	0.0	\$0	6.1	\$1,179,641	2.0	\$19,212	2028	13
2029	14	\$1,631,166		\$77,675	5%		\$27,474	\$0	1,983,768	0.0	\$0	0.0	\$0	0.0	\$0	2.8	\$27,474	2029	14
2030	15	\$1,712,725		\$81,558	5%		\$15,585	\$0	3,680,908	0.0	\$0	0.0	\$0	0.0	\$0	1.5	\$15,585	2030	15
2031	16	\$1,798,361		\$85,636	5%		\$10,806	\$0	5,468,463	0.0	\$0	0.0	\$0	0.0	\$0	1.0	\$10,806	2031	16
2032	17	\$1,888,279		\$89,918	5%		\$152,611	\$0	7,204,132	0.0	\$0	0.0	\$0	0.0	\$0	13.6	\$152,611	2032	17
2033	18	\$1,982,693		\$94,414	5%		\$23,375	\$0	9,163,450	0.0	\$0	0.0	\$0	0.0	\$0	2.0	\$23,375	2033	18
2034	19	\$2,081,828		\$99,135	5%		\$33,426	\$0	11,211,852	0.0	\$0	0.0	\$0	0.0	\$0	2.8	\$33,426	2034	19
2035	20	\$2,394,102		\$312,274	15%		\$18,962	\$0	13,586,992	0.0	\$0	0.0	\$0	0.0	\$0	1.5	\$18,962	2035	20
				\$1,082,725			\$11,190,587	\$3,896,428		6.76	\$2,460,640	14.07	\$3,957,221	23.14	\$4,222,021	56.5	\$550,705		

Afton Road Planning Spread Sheet - 2016

09.13.16

Designed By: Stan Ross

Bond Amount = \$3,000,000
 Bond Duration (years) = 10
 Bond Rate (%) = 2.0%

										Reclamation (25 year life)		Mill & Overlay (10 - 15 year life)		Micro Surfacing / Thin Overlay (Extends life by 25 years)		Crack Seal		X	
Year	Year Number	Yearly Allocation (includes Budget Increases)	Periodic Adjustment Notes	Dollar Amount Increase based on %	Annual % Road Budget Increase		Annual Projected Cost	Bond Annual Cost (P&I)	Balance After Expense	Distance (Miles)	Cost	Distance (miles)	Cost	Distance (miles)	Cost	Distance (miles)	Cost	Year	Year Number
2016	1	\$145,000					\$0		145,000	0.0	\$0	0.0	\$0	0.0	\$0	0.0	\$0	2016	1
2017	2	\$275,800	\$25,000	\$150,800	104%		\$2,924,250	\$333,980	162,570	3.5	\$1,286,250	6.5	\$1,638,000	0.0	\$0	0.0	\$0	2017	2
2018	3	\$577,490	\$150,000	\$151,690	55%		\$264,600	\$333,980	141,481	0.0	\$0	1.0	\$264,600	0.0	\$0	0.0	\$0	2018	3
2019	4	\$652,564		\$75,074	13%		\$486,203	\$333,980	-26,138	1.2	\$486,203	0.0	\$0	0.0	\$0	0.0	\$0	2019	4
2020	5	\$724,346		\$71,782	11%		\$291,722	\$333,980	72,507	0.0	\$0	1.0	\$291,722	0.0	\$0	0.0	\$0	2020	5
2021	6	\$796,780		\$72,435	10%		\$459,461	\$333,980	75,846	0.0	\$0	1.5	\$459,461	0.0	\$0	0.0	\$0	2021	6
2022	7	\$955,523	\$95,000	\$63,742	8%		\$723,652	\$333,980	-26,262	0.0	\$0	2.0	\$643,246	0.0	\$0	10.0	\$80,406	2022	7
2023	8	\$1,003,299		\$47,776	5%		\$514,999	\$333,980	128,058	0.0	\$0	1.5	\$506,556	0.0	\$0	1.0	\$8,443	2023	8
2024	9	\$1,053,464		\$50,165	5%		\$809,477	\$333,980	38,066	0.0	\$0	0.6	\$212,754	3.3	\$586,085	1.2	\$10,638	2024	9
2025	10	\$1,106,137		\$52,673	5%		\$624,698	\$333,980	185,526	0.0	\$0	0.0	\$0	3.3	\$615,390	1.0	\$9,308	2025	10
2026	11	\$1,161,444		\$55,307	5%		\$945,876	\$333,980	67,114	0.5	\$285,057	0.0	\$0	3.3	\$646,159	1.5	\$14,660	2026	11
2027	12	\$1,479,516	\$260,000	\$58,072	5%		\$1,549,885	\$0	-3,255	1.3	\$748,273	0.0	\$0	3.3	\$678,467	12.0	\$123,144	2027	12
2028	13	\$1,553,492		\$73,976	5%		\$1,493,588	\$0	56,649	1.2	\$754,260	0.0	\$0	3.3	\$712,391	2.5	\$26,938	2028	13
2029	14	\$1,631,166		\$77,675	5%		\$768,375	\$0	919,440	0.0	\$0	0.0	\$0	3.3	\$748,010	1.8	\$20,365	2029	14
2030	15	\$1,712,725		\$81,558	5%		\$797,290	\$0	1,834,874	0.0	\$0	0.0	\$0	3.3	\$785,411	1.0	\$11,880	2030	15
2031	16	\$1,798,361		\$85,636	5%		\$24,947	\$0	3,608,288	0.0	\$0	0.0	\$0	0.0	\$0	2.0	\$24,947	2031	16
2032	17	\$1,888,279		\$89,918	5%		\$173,539	\$0	5,323,029	0.0	\$0	0.0	\$0	0.0	\$0	13.3	\$173,539	2032	17
2033	18	\$1,982,693		\$94,414	5%		\$50,883	\$0	7,254,839	0.0	\$0	0.0	\$0	0.0	\$0	3.7	\$50,883	2033	18
2034	19	\$2,081,828		\$99,135	5%		\$25,991	\$0	9,310,675	0.0	\$0	0.0	\$0	0.0	\$0	1.8	\$25,991	2034	19
2035	20	\$2,185,919		\$104,091	5%		\$15,162	\$0	11,481,432	0.0	\$0	0.0	\$0	0.0	\$0	1.0	\$15,162	2035	20
				\$1,082,725			\$12,944,596	\$3,339,796		7.65	\$3,560,042	14.10	\$4,016,339	23.14	\$4,771,913	53.8	\$596,303		

City of Afton
3033 St. Croix Trl, P.O. Box 219
Afton, MN 55001

Meeting Date Feb. 21, 2017

Public Works Committee

To: Public Works Committee Members
From: Ron Moorse, City Administrator
Date: February 16, 2017
Re: 30th Street Culvert Improvement

The Public Works Committee has discussed the large culvert on 30th Street west of Nybeck that has experienced erosion and deterioration of the guardrail such that it is no longer anchored. The culvert consists of two new sections that appear to be 8x8 box culverts and an approximately 100yr old brick mortar section. Tri County originally proposed an option that would retain the current culvert and provide a new concrete foundation for a new guardrail. The City Engineer's bridge/culvert inspector advised that the proposed concrete foundation would not be structurally sound and may fail. Below is an outline of the City Engineer's concerns regarding this option.

City Engineer's Concerns Regarding New Concrete Foundation for New Guardrail

- We have no existing information on this structure, it appears to be +100 yrs, which is why building anything into it or off of it may cause failure. Disturbance of the soil around it would change the loading of arch and could push it to fail on itself.
- The main problem is roadway runoff creating erosion. The City should focus on eliminating this issue (curb and gutter). If concrete fill was placed on the edge it could still continue to erode under the structure and may take a more direct path to the structure itself.
- Without an inspection or analysis we cannot recommend this option.

If the original proposal is not acceptable, Tri County has indicated it would propose to leave in place the sections of culvert that are in good condition and install a new section of culvert that extends substantially beyond the current culvert to enable a new guardrail to be installed. The cost of this solution is approximately \$24,500 for materials and \$28,000 for labor and restoration. The surface work (curb and gutter, black top and guard rail) is proposed to be included in the 2017 Pavement Management Project.

These options are to be discussed by the Public Works Committee so that the Committee can provide a recommendation to the City Council.