

SUDDEN VALLEY COMMUNITY ASSOCIATION
ROADS
RESERVE STUDY
LEVEL III: UPDATE WITH NO VISUAL SITE INSPECTION
2019



SUDDEN VALLEY COMMUNITY ASSOCIATION - ROADS

Executive Summary

	<p><u>Year of Report:</u> January 1, 2019 to December 31, 2019</p> <p><u>Number of Units:</u> 3152 Units</p> <p><u>Parameters:</u> Beginning Balance: \$898,900 Year 2019 Current Contribution: \$1,112,122</p>	
	<p>Year 2019 Projected Interest Earned: \$28</p> <p>Inflation: 3.00%</p> <p>Annual Increase to Current Contribution: 0.00%</p> <p>Lowest Cash Balance Over 30 Years (Threshold): -\$35,427,322</p> <p>Average Reserve Assessment per Unit: \$29.40</p> <p>RCW 64.90.550 Section 4.2 Disclosures:</p> <p>(a) A reserve component list: Please see pages 7 (b) Date of study: February 20, 2019 This reserve study meets the requirements of RCW 64.38.070 section 4</p>	
<p>(c) Level III: Update with No Visual Site Inspection (d) Reserve account balance as of February 20, 2019: \$898,900 (e) Percent funded as of January 1, 2019 : 30% (f) Special assessments implemented or planned: Please see page 6 (g) Interest rate: 0% Inflation rate: 3.00% (h) Current reserve account contribution rate: \$1,112,122 (i) 2019 Current reserve contribution: \$1,112,122 2019 Fully funded contribution: 5,114,276 2019 Baseline contribution: 1,584,831 (j) Projected account balance for thirty years: Please see page 6 (k) This reserve study was prepared by a reserve study professional (l) Reserve Study deficit per unit: (\$1,850.01) Fully Funded Amount at of January 1, 2019 : \$6,730,121.85</p>		

Total Deficit as of 1/1/2019: Fully Funded Balance as of 1/1/2019 – Reserve Balance as of 1/1/2019
\$6,730,121.85- \$898,900 = \$5,831,221.85

The fully funded balance deficit/surplus per RCW 64.90.550 effective July 1, 2018

A statement of the amount of any current deficit or surplus in reserve funding expressed on a dollars per unit basis. The amount is calculated by subtracting the association's reserve account balance as of the date of the study from the fully funded balance, and then multiplying the result by the fraction or percentage of the common expenses of the association allocable to each unit; except that if the fraction or percentage of the common expenses of the association allocable vary by unit, the association must calculate any current deficit or surplus in a manner that reflects the variation.

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**Sudden Valley Community Association - Roads
Category Detail Index**

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1246	Culvert Work 2027	2027	21 of 31
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1234	Culvert Work 2029+	2029	22 of 31
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Roads			
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1249	Road and Parking Lot Work 2019	2019	24 of 31
1250	Road and Parking Lot Work 2020	2020	24 of 31
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1252	Road and Parking Lot Work 2022	2022	25 of 31
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1254	Road and Parking Lot Work 2024	2024	26 of 31
1255	Road and Parking Lot Work 2025	2025	26 of 31
1256	Road and Parking Lot Work 2026	2026	26 of 31
1257	Road and Parking Lot Work 2027	2027	27 of 31
1248	Road and Parking Lot Work 2028	2028	27 of 31
	Total Funded Assets	26	
	Total Unfunded Assets	<u>0</u>	
	Total Assets	26	

Sudden Valley Community Association - Roads
 Bellingham, Washington
Cash Flow Method - Current Funding Model Summary

Report Date	February 20, 2019
Account Number	2sudde
Budget Year Beginning	January 01, 2019
Budget Year Ending	December 31, 2019
Total Units	3152

<i>Report Parameters</i>	
Inflation	3.00%
Interest Rate on Reserve Deposit	0.10%
2019 Beginning Balance	\$898,900

**Current Funding
 Model Summary**

- This study utilizes the cash flow method and the threshold funding model, which establishes a reserve funding goal that keeps the reserve balance above a specified dollar or percent funded amount.
- The following items were not included in the analysis because they have useful lives greater than 30 years: grading/drainage; foundation/footings; storm drains; telephone, cable, and internet lines.
- This funding scenario begins with a contribution of **\$1,112,122** in **2019** and increases **0.00%** each year for the remaining years of the study. A minimum balance of **-\$35,427,322** is maintained.
- The purpose of this study is to insure that adequate replacement funds are available when components reach the end of their useful life. Components will be replaced as required, not necessarily in their expected replacement year. This analysis should be updated annually.

Cash Flow Method - Threshold Funding Model Summary of Calculations

Required Month Contribution	\$92,676.83
<i>\$29.40 per unit monthly</i>	
Average Net Month Interest Earned	<u>\$2.33</u>
Total Month Allocation to Reserves	\$92,679.16
<i>\$29.40 per unit monthly</i>	

**Sudden Valley Community Association - Roads
Cash Flow Method - Current Funding Model Projection**

Beginning Balance: \$898,900

Year	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2019	1,112,122	28	1,473,259	537,791	5,818,089	9%
2020	1,112,122		2,159,146	-509,233	5,357,017	-10%
2021	1,112,122		1,549,531	-946,642	3,809,017	-25%
2022	1,112,122		961,115	-795,635	5,012,610	-16%
2023	1,112,122		3,187,994	-2,871,506	5,073,770	-57%
2024	1,112,122		1,699,760	-3,459,144	2,320,395	-149%
2025	1,112,122		1,762,536	-4,109,558	3,639,921	-113%
2026	1,112,122		1,673,002	-4,670,439	3,554,856	-131%
2027	1,112,122		1,166,628	-4,724,945	4,243,306	-111%
2028	1,112,122		2,172,072	-5,784,894	5,241,040	-110%
2029	1,112,122		1,917,950	-6,590,722	3,494,838	-189%
2030	1,112,122		1,975,489	-7,454,089	3,801,424	-196%
2031	1,112,122		2,034,753	-8,376,720	4,123,259	-203%
2032	1,112,122		2,095,796	-9,360,394	4,460,983	-210%
2033	1,112,122		2,158,670	-10,406,942	4,815,260	-216%
2034	1,112,122		2,223,430	-11,518,250	5,186,778	-222%
2035	1,112,122		2,438,956	-12,845,084	5,422,965	-237%
2036	1,112,122		2,358,837	-14,091,799	5,826,543	-242%
2037	1,112,122		2,429,602	-15,409,279	6,249,455	-247%
2038	1,112,122		2,502,490	-16,799,646	6,692,497	-251%
2039	1,112,122		2,577,565	-18,265,089	7,156,497	-255%
2040	1,112,122		2,654,891	-19,807,859	7,642,314	-259%
2041	1,112,122		2,734,538	-21,430,275	8,150,840	-263%
2042	1,112,122		2,816,574	-23,134,727	8,682,999	-266%
2043	1,112,122		2,901,072	-24,923,677	9,239,751	-270%
2044	1,112,122		2,988,104	-26,799,658	9,822,094	-273%
2045	1,112,122		3,277,753	-28,965,290	10,225,055	-283%
2046	1,112,122		3,170,079	-31,023,247	10,855,541	-286%
2047	1,112,122		3,265,182	-33,176,307	11,514,653	-288%
2048	1,112,122		3,363,137	-35,427,322	12,203,543	-290%

**Sudden Valley Community Association - Roads
Component Summary By Area**

Description	Date in Service	Replacement Year	Useful	Adjustment	Remaining	Units	Unit Cost	Current Cost
Culverts								
Capital Improvement Plan	2015	2025	10	0	6	1 Total	92,742.00	92,742
Culvert Vegetation Control	2016	2019	1	0	0	1 Total	108,742.00	108,742
Culvert Work 2019	2019	2019	30	0	0	1 Total	414,291.00	414,291
Culvert Work 2020	2020	2020	30	0	1	1 Total	686,230.00	686,230
Culvert Work 2021	2021	2021	30	0	2	1 Total	456,008.00	456,008
Culvert Work 2022	2022	2022	30	0	3	1 Total	718,729.00	718,729
Culvert Work 2023	2023	2023	30	0	4	1 Total	282,836.00	282,836
Culvert Work 2024	2024	2024	30	0	5	1 Total	1,241,022.00	1,241,022
Culvert Work 2025	2025	2025	30	0	6	1 Total	167,558.00	167,558
Culvert Work 2026	2026	2026	1	0	7	1 Total	450,270.00	450,270
Culvert Work 2027	2027	2027	1	0	8	1 Total	167,558.00	167,558
Culvert Work 2028	2028	2028	1	0	9	1 Total	977,311.00	977,311
Culvert Work 2029+	2029	2029	1	0	10	1 Total	500,000.00	500,000
Large Culvert or Bridge Inspection (altern.. Culverts - Total	2019	2019	1	0	0	1 Total	5,628.00	<u>5,628</u> \$6,268,925
Roads								
Annual On-Call Engineering Services	2019	2019	1	0	0	1 Total	33,765.00	33,765
Road Work 2029+	2029	2029	1	0	10	2 Miles	389,500.00	779,000
Road and Parking Lot Work 2019	2019	2019	1	0	0	1 Total	910,833.00	910,833
Road and Parking Lot Work 2020	2020	2020	1	0	1	1 Total	1,261,893.00	1,261,893
Road and Parking Lot Work 2021	2021	2021	1	0	2	1 Total	856,439.00	856,439
Road and Parking Lot Work 2022	2022	2022	1	0	3	1 Total	12,692.00	12,692
Road and Parking Lot Work 2023	2023	2023	1	0	4	1 Total	2,401,520.00	2,401,520
Road and Parking Lot Work 2024	2024	2024	1	0	5	1 Total	77,071.00	77,071
Road and Parking Lot Work 2025	2025	2025	1	0	6	1 Total	1,067,661.00	1,067,661
Road and Parking Lot Work 2026	2026	2026	1	0	7	1 Total	761,899.00	761,899
Road and Parking Lot Work 2027	2027	2027	1	0	8	1 Total	605,254.00	605,254
Road and Parking Lot Work 2028	2028	2028	1	0	9	1 Total	539,266.00	<u>539,266</u> \$9,307,293
Roads - Total								
Total Asset Summary								<u>\$15,576,218</u>

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2019	
Annual On-Call Engineering Services	33,765
Culvert Vegetation Control	108,742
Culvert Work 2019	414,291
Large Culvert or Bridge Inspection (alternating years)	5,628
Road and Parking Lot Work 2019	910,833
Total for 2019	\$1,473,259
Replacement Year 2020	
Annual On-Call Engineering Services	34,778
Culvert Vegetation Control	112,004
Culvert Work 2020	706,817
Large Culvert or Bridge Inspection (alternating years)	5,797
Road and Parking Lot Work 2020	1,299,750
Total for 2020	\$2,159,146
Replacement Year 2021	
Annual On-Call Engineering Services	35,821
Culvert Vegetation Control	115,364
Culvert Work 2021	483,779
Large Culvert or Bridge Inspection (alternating years)	5,971
Road and Parking Lot Work 2021	908,596
Total for 2021	\$1,549,531
Replacement Year 2022	
Annual On-Call Engineering Services	36,896
Culvert Vegetation Control	118,825
Culvert Work 2022	785,375
Large Culvert or Bridge Inspection (alternating years)	6,150
Road and Parking Lot Work 2022	13,869
Total for 2022	\$961,115
Replacement Year 2023	
Annual On-Call Engineering Services	38,003
Culvert Vegetation Control	122,390

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
<i>Replacement Year 2023 continued...</i>	
Culvert Work 2023	318,334
Large Culvert or Bridge Inspection (alternating years)	6,334
Road and Parking Lot Work 2023	2,702,932
Total for 2023	<u>\$3,187,994</u>
Replacement Year 2024	
Annual On-Call Engineering Services	39,143
Culvert Vegetation Control	126,062
Culvert Work 2024	1,438,685
Large Culvert or Bridge Inspection (alternating years)	6,524
Road and Parking Lot Work 2024	89,346
Total for 2024	<u>\$1,699,760</u>
Replacement Year 2025	
Annual On-Call Engineering Services	40,317
Capital Improvement Plan	110,739
Culvert Vegetation Control	129,844
Culvert Work 2025	200,073
Large Culvert or Bridge Inspection (alternating years)	6,720
Road and Parking Lot Work 2025	1,274,843
Total for 2025	<u>\$1,762,536</u>
Replacement Year 2026	
Annual On-Call Engineering Services	41,527
Culvert Vegetation Control	133,739
Culvert Work 2026	553,775
Large Culvert or Bridge Inspection (alternating years)	6,922
Road and Parking Lot Work 2026	937,040
Total for 2026	<u>\$1,673,002</u>
Replacement Year 2027	
Annual On-Call Engineering Services	42,772
Culvert Vegetation Control	137,751
Culvert Work 2027	212,257

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
<i>Replacement Year 2027 continued...</i>	
Large Culvert or Bridge Inspection (alternating years)	7,129
Road and Parking Lot Work 2027	766,718
Total for 2027	\$1,166,628
Replacement Year 2028	
Annual On-Call Engineering Services	44,056
Culvert Vegetation Control	141,884
Culvert Work 2028	1,275,169
Large Culvert or Bridge Inspection (alternating years)	7,343
Road and Parking Lot Work 2028	703,620
Total for 2028	\$2,172,072
Replacement Year 2029	
Annual On-Call Engineering Services	45,377
Culvert Vegetation Control	146,140
Culvert Work 2029+	671,958
Large Culvert or Bridge Inspection (alternating years)	7,564
Road Work 2029+	1,046,911
Total for 2029	\$1,917,950
Replacement Year 2030	
Annual On-Call Engineering Services	46,739
Culvert Vegetation Control	150,524
Culvert Work 2029+	692,117
Large Culvert or Bridge Inspection (alternating years)	7,790
Road Work 2029+	1,078,318
Total for 2030	\$1,975,489
Replacement Year 2031	
Annual On-Call Engineering Services	48,141
Culvert Vegetation Control	155,040
Culvert Work 2029+	712,880
Large Culvert or Bridge Inspection (alternating years)	8,024
Road Work 2029+	1,110,668
Total for 2031	\$2,034,753

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2032	
Annual On-Call Engineering Services	49,585
Culvert Vegetation Control	159,691
Culvert Work 2029+	734,267
Large Culvert or Bridge Inspection (alternating years)	8,265
Road Work 2029+	1,143,988
Total for 2032	<u>\$2,095,796</u>
Replacement Year 2033	
Annual On-Call Engineering Services	51,073
Culvert Vegetation Control	164,482
Culvert Work 2029+	756,295
Large Culvert or Bridge Inspection (alternating years)	8,513
Road Work 2029+	1,178,307
Total for 2033	<u>\$2,158,670</u>
Replacement Year 2034	
Annual On-Call Engineering Services	52,605
Culvert Vegetation Control	169,416
Culvert Work 2029+	778,984
Large Culvert or Bridge Inspection (alternating years)	8,768
Road Work 2029+	1,213,657
Total for 2034	<u>\$2,223,430</u>
Replacement Year 2035	
Annual On-Call Engineering Services	54,183
Capital Improvement Plan	148,824
Culvert Vegetation Control	174,499
Culvert Work 2029+	802,353
Large Culvert or Bridge Inspection (alternating years)	9,031
Road Work 2029+	1,250,066
Total for 2035	<u>\$2,438,956</u>
Replacement Year 2036	
Annual On-Call Engineering Services	55,808

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
<i>Replacement Year 2036 continued...</i>	
Culvert Vegetation Control	179,734
Culvert Work 2029+	826,424
Large Culvert or Bridge Inspection (alternating years)	9,302
Road Work 2029+	1,287,568
Total for 2036	\$2,358,837
Replacement Year 2037	
Annual On-Call Engineering Services	57,483
Culvert Vegetation Control	185,126
Culvert Work 2029+	851,217
Large Culvert or Bridge Inspection (alternating years)	9,581
Road Work 2029+	1,326,195
Total for 2037	\$2,429,602
Replacement Year 2038	
Annual On-Call Engineering Services	59,207
Culvert Vegetation Control	190,680
Culvert Work 2029+	876,753
Large Culvert or Bridge Inspection (alternating years)	9,869
Road Work 2029+	1,365,981
Total for 2038	\$2,502,490
Replacement Year 2039	
Annual On-Call Engineering Services	60,983
Culvert Vegetation Control	196,400
Culvert Work 2029+	903,056
Large Culvert or Bridge Inspection (alternating years)	10,165
Road Work 2029+	1,406,961
Total for 2039	\$2,577,565
Replacement Year 2040	
Annual On-Call Engineering Services	62,813
Culvert Vegetation Control	202,292
Culvert Work 2029+	930,147

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
<i>Replacement Year 2040 continued...</i>	
Large Culvert or Bridge Inspection (alternating years)	10,470
Road Work 2029+	1,449,169
Total for 2040	\$2,654,891
Replacement Year 2041	
Annual On-Call Engineering Services	64,697
Culvert Vegetation Control	208,361
Culvert Work 2029+	958,052
Large Culvert or Bridge Inspection (alternating years)	10,784
Road Work 2029+	1,492,645
Total for 2041	\$2,734,538
Replacement Year 2042	
Annual On-Call Engineering Services	66,638
Culvert Vegetation Control	214,612
Culvert Work 2029+	986,793
Large Culvert or Bridge Inspection (alternating years)	11,107
Road Work 2029+	1,537,424
Total for 2042	\$2,816,574
Replacement Year 2043	
Annual On-Call Engineering Services	68,637
Culvert Vegetation Control	221,050
Culvert Work 2029+	1,016,397
Large Culvert or Bridge Inspection (alternating years)	11,441
Road Work 2029+	1,583,547
Total for 2043	\$2,901,072
Replacement Year 2044	
Annual On-Call Engineering Services	70,696
Culvert Vegetation Control	227,682
Culvert Work 2029+	1,046,889
Large Culvert or Bridge Inspection (alternating years)	11,784
Road Work 2029+	1,631,053
Total for 2044	\$2,988,104

**Sudden Valley Community Association - Roads
Annual Expenditure Detail**

Description	Expenditures
Replacement Year 2045	
Annual On-Call Engineering Services	72,817
Capital Improvement Plan	200,007
Culvert Vegetation Control	234,512
Culvert Work 2029+	1,078,296
Large Culvert or Bridge Inspection (alternating years)	12,137
Road Work 2029+	1,679,985
Total for 2045	\$3,277,753
Replacement Year 2046	
Annual On-Call Engineering Services	75,002
Culvert Vegetation Control	241,547
Culvert Work 2029+	1,110,645
Large Culvert or Bridge Inspection (alternating years)	12,501
Road Work 2029+	1,730,384
Total for 2046	\$3,170,079
Replacement Year 2047	
Annual On-Call Engineering Services	77,252
Culvert Vegetation Control	248,794
Culvert Work 2029+	1,143,964
Large Culvert or Bridge Inspection (alternating years)	12,876
Road Work 2029+	1,782,296
Total for 2047	\$3,265,182
Replacement Year 2048	
Annual On-Call Engineering Services	79,569
Culvert Vegetation Control	256,258
Culvert Work 2029+	1,178,283
Large Culvert or Bridge Inspection (alternating years)	13,263
Road Work 2029+	1,835,765
Total for 2048	\$3,363,137

**Sudden Valley Community Association - Roads
Detail Report by Area**

Capital Improvement Plan

Asset ID	1259	1 Total	@ \$92,742.00
		Asset Cost	\$92,742.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$110,738.80
Placed in Service	January 2015		
Useful Life	10		
Replacement Year	2025		
Remaining Life	6		

This provision is to update the capital improvement plan.

Culvert Vegetation Control

Asset ID	1244	1 Total	@ \$108,742.00
		Asset Cost	\$108,742.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$108,742.00
Placed in Service	January 2016		
Useful Life	1		
Replacement Year	2019		
Remaining Life	0		

This provision was approved by the membership in a 2016 special election requiring significant annual maintenance work on ditches, culverts and swales necessary for the long-term maintenance of the roads. This is anticipated for one cycle to take 10 years.

Culvert Work 2019

Asset ID	1235	1 Total	@ \$414,291.00
		Asset Cost	\$414,291.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$414,291.00
Placed in Service	January 2019		
Useful Life	30		
Replacement Year	2019		
Remaining Life	0		

This provision is for annual culvert maintenance and repairs in 2019. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

**Sudden Valley Community Association - Roads
Detail Report by Area**

Culvert Work 2019 continued...

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Culvert Work 2020			1 Total @ \$686,230.00
Asset ID	1236	Asset Cost	\$686,230.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$706,816.90
Placed in Service	January 2020		
Useful Life	30		
Replacement Year	2020		
Remaining Life	1		

This provision is for annual culvert maintenance and repairs in 2020. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Culvert Work 2021			1 Total @ \$456,008.00
Asset ID	1237	Asset Cost	\$456,008.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$483,778.89
Placed in Service	January 2021		
Useful Life	30		
Replacement Year	2021		
Remaining Life	2		

This provision is for annual culvert maintenance and repairs in 2021. In December 2014,

**Sudden Valley Community Association - Roads
Detail Report by Area**

Culvert Work 2021 continued...

Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Culvert Work 2022			1 Total @ \$718,729.00
Asset ID	1238	Asset Cost	\$718,729.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$785,374.58
Placed in Service	January 2022		
Useful Life	30		
Replacement Year	2022		
Remaining Life	3		

This provision is for annual culvert maintenance and repairs in 2022. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

**Sudden Valley Community Association - Roads
Detail Report by Area**

Culvert Work 2023

		1 Total	@ \$282,836.00
Asset ID	1239	Asset Cost	\$282,836.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$318,334.41
Placed in Service	January 2023		
Useful Life	30		
Replacement Year	2023		
Remaining Life	4		

This provision is for annual culvert maintenance and repairs in 2023. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Culvert Work 2024

		1 Total	@ \$1,241,022.00
Asset ID	1240	Asset Cost	\$1,241,022.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$1,438,684.63
Placed in Service	January 2024		
Useful Life	30		
Replacement Year	2024		
Remaining Life	5		

This provision is for annual culvert maintenance and repairs in 2024. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

**Sudden Valley Community Association - Roads
Detail Report by Area**

Culvert Work 2025

		1 Total	@ \$167,558.00
Asset ID	1241	Asset Cost	\$167,558.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$200,073.01
Placed in Service	January 2025		
Useful Life	30		
Replacement Year	2025		
Remaining Life	6		

This provision is for annual culvert maintenance and repairs in 2025. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Culvert Work 2026

		1 Total	@ \$450,270.00
Asset ID	1242	Asset Cost	\$450,270.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$553,775.31
Placed in Service	January 2026		
Useful Life	1		
Replacement Year	2026		
Remaining Life	7		

This provision is for annual culvert maintenance and repairs in 2026. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

**Sudden Valley Community Association - Roads
Detail Report by Area**

Culvert Work 2027

		1 Total	@ \$167,558.00
Asset ID	1246	Asset Cost	\$167,558.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$212,257.46
Placed in Service	January 2027		
Useful Life	1		
Replacement Year	2027		
Remaining Life	8		

This provision is for annual culvert maintenance and repairs in 2027. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Culvert Work 2028

		1 Total	@ \$977,311.00
Asset ID	1247	Asset Cost	\$977,311.00
	Culverts	Percent Replacement	100%
	Grounds	Future Cost	\$1,275,169.18
Placed in Service	January 2028		
Useful Life	1		
Replacement Year	2028		
Remaining Life	9		

This provision is for annual culvert maintenance and repairs in 2028. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

**Sudden Valley Community Association - Roads
Detail Report by Area**

Culvert Work 2029+

Asset ID	1234	1 Total	@ \$500,000.00
	Culverts	Asset Cost	\$500,000.00
	Grounds	Percent Replacement	100%
Placed in Service	January 2029	Future Cost	\$671,958.19
Useful Life	1		
Replacement Year	2029		
Remaining Life	10		

This provision is for annual culvert maintenance and repairs in 2029+. In December 2014, Wilson Engineering, LLC prepared the Phase II Stormwater Master Plan and Capital Improvement Plan for the maintenance and replacement of culverts from the years 2015-2025. At the end of the period, a new plan will need to be created.

This has been updated in 2019.

From the years 2029+ an average of \$500,000 per year is spent for culvert maintenance and replacement.

The cost and useful life are based on information from Wilson Engineering.

Large Culvert or Bridge Inspection (alternating years)

Asset ID	1261	1 Total	@ \$5,628.00
	Culverts	Asset Cost	\$5,628.00
	Grounds	Percent Replacement	100%
Placed in Service	January 2019	Future Cost	\$5,628.00
Useful Life	1		
Replacement Year	2019		
Remaining Life	0		

Provide Capital Roads funds for the inspection of Large Culverts & Bridges (alternating years) which is utilized for interim updating of the 10 year Capital Improvement Plan. In response to and for evaluation of potential emerging Capital roads projects.

Culverts - Total Current Cost \$6,268,925

**Sudden Valley Community Association - Roads
Detail Report by Area**

Annual On-Call Engineering Services		1 Total	@ \$33,765.00
Asset ID	1260	Asset Cost	\$33,765.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$33,765.00
Placed in Service	January 2019		
Useful Life	1		
Replacement Year	2019		
Remaining Life	0		

Provide Capital Roads funds for On-Call Roads Engineering which is utilized for immediate response and evaluation of potential emerging Capital roads projects.

Funds On-Call Engineering support to address emergent demanding issues of Roads Capital Projects which require rapid response technical evaluations to determine necessity and path forward options.

Road Work 2029+		2 Miles	@ \$389,500.00
Asset ID	1245	Asset Cost	\$779,000.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$1,046,910.86
Placed in Service	January 2029		
Useful Life	1		
Replacement Year	2029		
Remaining Life	10		

This provision is for annual road maintenance and repairs. Per the Association:

We have about 40 miles of roads (as shown by the GIS data surveys just completed)

- For the purpose of this discussion there are three types:
- Type 1 structurally sound roads requiring overlay to extend life 20 years,
- Type 2 roads requiring isolated areas of pavement rehabilitation prior to the overlay, and
- Type 3 failed road segments requiring full removal and replacement for new 20-year service.
- In 2016 dollars:
- Overlay of Type 1 roads is estimated at \$215,000/ mile plus permits, Construction Management and overhead costs to the Association.
- Rebuilding of Type 2 roads is estimated at \$325,000/ mile plus permits, Construction Management and overhead costs to the Association
- Type 3 roads are estimated at \$395,000/ mile plus permits, Construction Management and overhead costs to the Association
- We expect 6% of our roads are Type 3 (as of 2016 inspections).

**Sudden Valley Community Association - Roads
Detail Report by Area**

Road Work 2029+ continued...

- Expect 4% of our roads are Type 2 (as of 2016 inspections).
 - Road work should be started at a pace of 2 miles/ year for 20 years.
 - The estimated price tag in 2016 dollars is \$9,208,000 plus indirect costs and Construction Management.
- An estimated cost of \$380,000 per mile is used.

This has been updated in 2019.

Road and Parking Lot Work 2019			1 Total @ \$910,833.00
Asset ID	1249	Asset Cost	\$910,833.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$910,833.00
Placed in Service	January 2019		
Useful Life	1		
Replacement Year	2019		
Remaining Life	0		

This provision is for annual road maintenance and repairs in 2019 per the Association. (Micro Surfacing)

This has been updated in 2019.

Road and Parking Lot Work 2020			1 Total @ \$1,261,893.00
Asset ID	1250	Asset Cost	\$1,261,893.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$1,299,749.79
Placed in Service	January 2020		
Useful Life	1		
Replacement Year	2020		
Remaining Life	1		

This provision is for annual road maintenance and repairs in 2020 per the Association. (Micro Surfacing)

This has been updated in 2019.

**Sudden Valley Community Association - Roads
Detail Report by Area**

Road and Parking Lot Work 2021

		1 Total	@ \$856,439.00
Asset ID	1251	Asset Cost	\$856,439.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$908,596.14
Placed in Service	January 2021		
Useful Life	1		
Replacement Year	2021		
Remaining Life	2		

This provision is for annual road maintenance and repairs in 2021 per the Association. (Micro Surfacing)

This has been updated in 2019.

Road and Parking Lot Work 2022

		1 Total	@ \$12,692.00
Asset ID	1252	Asset Cost	\$12,692.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$13,868.89
Placed in Service	January 2022		
Useful Life	1		
Replacement Year	2022		
Remaining Life	3		

This provision is for annual road maintenance and repairs in 2022 per the Association. (Micro Surfacing)

This has been updated in 2019.

Road and Parking Lot Work 2023

		1 Total	@ \$2,401,520.00
Asset ID	1253	Asset Cost	\$2,401,520.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$2,702,931.92
Placed in Service	January 2023		
Useful Life	1		
Replacement Year	2023		
Remaining Life	4		

This provision is for annual road maintenance and repairs in 2023 per the Association. (Micro Surfacing)

**Sudden Valley Community Association - Roads
Detail Report by Area**

Road and Parking Lot Work 2023 continued...

This has been updated in 2019.

Road and Parking Lot Work 2024		1 Total	@ \$77,071.00
Asset ID	1254	Asset Cost	\$77,071.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$89,346.41
Placed in Service	January 2024		
Useful Life	1		
Replacement Year	2024		
Remaining Life	5		

This provision is for annual road maintenance and repairs in 2024 per the Association. (Micro Surfacing)

This has been updated in 2019.

Road and Parking Lot Work 2025		1 Total	@ \$1,067,661.00
Asset ID	1255	Asset Cost	\$1,067,661.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$1,274,843.07
Placed in Service	January 2025		
Useful Life	1		
Replacement Year	2025		
Remaining Life	6		

This provision is for annual road maintenance and repairs in 2025 per the Association. (Micro Surfacing)

This has been updated in 2019.

Road and Parking Lot Work 2026		1 Total	@ \$761,899.00
Asset ID	1256	Asset Cost	\$761,899.00
	Roads	Percent Replacement	100%
	Grounds	Future Cost	\$937,039.67
Placed in Service	January 2026		
Useful Life	1		
Replacement Year	2026		
Remaining Life	7		

This provision is for annual road maintenance and repairs in 2026 per the Association. (Micro

Sudden Valley Community Association - Roads
 Bellingham, Washington
Fully Funded Method Summary

		<i>Report Parameters</i>	
Report Date	February 20, 2019	Inflation	2.50%
Account Number	2sudde	Interest Rate on Reserve Deposit	0.10%
Budget Year Beginning	January 01, 2019	2019 Beginning Balance	\$898,900
Budget Year Ending	December 31, 2019		
Total Units	3152		

Full Funding
100% Funded Model Summary

- This scenario uses the fully funded method. A goal of being 100% funded is used.
- The following items were not included in the analysis because they have useful lives greater than 30 years: grading/drainage; foundation/footings; storm drains; telephone, cable, and internet lines.
- This funding scenario begins with an initial contribution of **\$5,114,276** in **2019** and varies each year for the remaining years of the study. A goal of being 100% funded is used.
- The purpose of this study is to insure that adequate replacement funds are available when components reach the end of their useful life. Components will be replaced as required, not necessarily in their expected replacement year. This analysis should be updated annually.

Fully Funded Method Summary of Calculations

Required Month Contribution	\$426,189.65
<i>\$135.21 per unit monthly</i>	
Average Net Month Interest Earned	<u>\$183.04</u>
Total Month Allocation to Reserves	\$426,372.69
<i>\$135.27 per unit monthly</i>	

**Sudden Valley Community Association - Roads
Fully Funded Method Projection**

Beginning Balance: \$898,900

Year	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2019	5,114,276	2,196	1,473,259	4,542,113	5,789,845	78%
2020	693,143	2,770	2,148,664	3,089,362	5,305,133	58%
2021	724,882	1,948	1,534,524	2,281,668	3,753,815	61%
2022	801,599	1,769	947,186	2,137,851	4,915,984	43%
2023	917,348		3,126,540	-71,341	4,951,810	-1%
2024	1,076,431		1,658,902	-653,813	2,253,625	-29%
2025	1,400,514		1,711,819	-965,118	3,518,021	-27%
2026	2,023,158		1,616,974	-558,933	3,419,126	-16%
2027	3,231,415	69	1,122,084	1,550,466	4,061,478	38%
2028	2,215,326	672	2,078,997	1,687,466	4,992,107	34%
2029	2,280,641	1,096	1,826,853	2,142,350	3,312,685	65%
2030	2,326,646	1,531	1,872,525	2,598,002	3,585,799	72%
2031	2,373,034	1,965	1,919,338	3,053,662	3,870,499	79%
2032	2,421,562	2,399	1,967,321	3,510,302	4,167,192	84%
2033	2,471,822	2,834	2,016,504	3,968,453	4,476,301	89%
2034	2,524,242	3,270	2,066,917	4,429,048	4,798,262	92%
2035	2,578,699	3,571	2,256,266	4,755,052	4,992,404	95%
2036	2,633,841	4,012	2,171,555	5,221,350	5,337,901	98%
2037	2,690,407	4,455	2,225,844	5,690,368	5,697,552	100%
2038	2,748,839	4,900	2,281,490	6,162,618	6,071,849	101%
2039	2,799,411	5,343	2,338,527	6,628,845	6,461,301	103%
2040	2,856,764	5,782	2,396,990	7,094,401	6,866,430	103%
2041	2,915,268	6,219	2,456,915	7,558,974	7,287,777	104%
2042	2,975,741	6,655	2,518,338	8,023,032	7,725,900	104%
2043	3,037,848	7,090	2,581,296	8,486,675	8,181,375	104%
2044	3,101,107	7,524	2,645,829	8,949,477	8,654,794	103%
2045	3,183,641	7,789	2,888,211	9,252,696	8,966,129	103%
2046	3,249,332	8,236	2,779,774	9,730,491	9,472,779	103%
2047	3,317,122	8,682	2,849,268	10,207,027	9,999,158	102%
2048	3,385,452	9,124	2,920,500	10,681,103	10,545,936	101%

Sudden Valley Community Association - Roads
 Bellingham, Washington
Baseline Funding Model Summary

Report Date	February 20, 2019
Account Number	2sude
Budget Year Beginning	January 01, 2019
Budget Year Ending	December 31, 2019
Total Units	3152

<i>Report Parameters</i>	
Inflation	2.50%
Annual Assessment Increase	2.50%
Interest Rate on Reserve Deposit	0.10%
2019 Beginning Balance	\$898,900

**Baseline Funding
 Fully Reserved Model Summary**

- This study utilizes the cash flow method and the threshold funding model, which establishes a reserve funding goal that keeps the reserve balance above 0 dollars. This scenario represents the minimum funding requirement.
- The following items were not included in the analysis because they have useful lives greater than 30 years: grading/drainage; foundation/footings; storm drains; telephone, cable, and internet lines.
- This funding scenario begins with a contribution of **\$1,584,831** in **2019** and increases **2.50%** each year for the remaining years of the study. A minimum balance of **\$0** is maintained.
- The purpose of this study is to insure that adequate replacement funds are available when components reach the end of their useful life. Components will be replaced as required, not necessarily in their expected replacement year. This analysis should be updated annually.

Baseline Threshold Method Summary of Calculations

Required Month Contribution	\$132,069.28
<i>\$41.90 per unit monthly</i>	
Average Net Month Interest Earned	<u>\$23.67</u>
Total Month Allocation to Reserves	\$132,092.96
<i>\$41.91 per unit monthly</i>	

**Sudden Valley Community Association - Roads
Baseline Funding Model Projection**

Beginning Balance: \$898,900

Year	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2019	1,584,831	284	1,473,259	1,010,757	5,789,845	17%
2020	1,624,452		2,148,664	486,544	5,305,133	9%
2021	1,665,064		1,534,524	617,084	3,753,815	16%
2022	1,706,690	594	947,186	1,377,183	4,915,984	28%
2023	1,749,357		3,126,540	0	4,951,810	0%
2024	1,793,091		1,658,902	134,189	2,253,625	6%
2025	1,837,919		1,711,819	260,289	3,518,021	7%
2026	1,883,867		1,616,974	527,181	3,419,126	15%
2027	1,930,963	451	1,122,084	1,336,511	4,061,478	33%
2028	1,979,237	330	2,078,997	1,237,081	4,992,107	25%
2029	2,028,718	509	1,826,853	1,439,455	3,312,685	43%
2030	2,079,436	693	1,872,525	1,647,059	3,585,799	46%
2031	2,131,422	882	1,919,338	1,860,026	3,870,499	48%
2032	2,184,708	1,076	1,967,321	2,078,489	4,167,192	50%
2033	2,239,325	1,275	2,016,504	2,302,585	4,476,301	51%
2034	2,295,308	1,479	2,066,917	2,532,456	4,798,262	53%
2035	2,352,691	1,551	2,256,266	2,630,432	4,992,404	53%
2036	2,411,508	1,766	2,171,555	2,872,152	5,337,901	54%
2037	2,471,796	1,986	2,225,844	3,120,090	5,697,552	55%
2038	2,533,591	2,212	2,281,490	3,374,403	6,071,849	56%
2039	2,596,931	2,443	2,338,527	3,635,251	6,461,301	56%
2040	2,661,854	2,681	2,396,990	3,902,796	6,866,430	57%
2041	2,728,400	2,925	2,456,915	4,177,206	7,287,777	57%
2042	2,796,610	3,175	2,518,338	4,458,654	7,725,900	58%
2043	2,866,526	3,431	2,581,296	4,747,315	8,181,375	58%
2044	2,938,189	3,694	2,645,829	5,043,370	8,654,794	58%
2045	3,011,644	3,788	2,888,211	5,170,590	8,966,129	58%
2046	3,086,935	4,065	2,779,774	5,481,816	9,472,779	58%
2047	3,164,108	4,348	2,849,268	5,801,004	9,999,158	58%
2048	3,243,211	4,639	2,920,500	6,128,354	10,545,936	58%