Sudden Valley Community Association

360-734-6430
4 Clubhouse Circle Bellingham, WA 98229
www.suddenvalley.com

CAPITAL REQUEST MEMO

To: **Sudden Valley Community Association Board of Directors**

From: **Michael Bennett, General Manager**

Date: **February 27th, 2025**

Subject: **Capital Request – Addendum to 2024 – Roads Project #9924.6 – Bridge Funding**

Purpose

To request change order from Feb. 2024 Bridge Designs Project Approval for 2025 funding approval from Roads Capital Code 9924.6 to purchase and install 2 bridges & repair culvert # 4.

Background

SVCA's 2025 capital budget includes $1,202,425.00 to purchase and install 2 bridges. These 2 bridges are being designed and permitted under Roads Capital Code 9924.6.

- Area Z Access Bridge (Road Bridge #2 – Roy Road Maintenance Yard Bridge) – This bridge is located off Honeycomb Lane to access Area Z and the community garden. This project will replace the existing bridge with a new 70' long by 14' wide pre-engineered steel bridge. The current bridge is at the end of its life cycle and has a 3-ton weight rating. Before the bridge rating reduction, the Maintenance Department heavily used this bridge. It allows them to access Gates 9, 13, and 3 without going on Lake Louise Road. This saves substantial time during snow events and heavy equipment access (backhoe, loader, roadside mower, etc.). This bridge provides the only public access to the Area Z Community Garden plot.

- Culvert #4 Replacement with Bridge (renaming to Road Bridge #5) – This is an 8' diameter corrugated metal arch culvert at the end of its life cycle; the bottom is rusted out and failing. Also, during the 2021 November flood event, the existing culvert didn't have the capacity to handle Beaver Creek's water volume, which led to a road failure, causing an emergency road repair. It is located on Polo Park Drive between the intersections of Lost Lake Lane and Sunnyside Lane. The new bridge will be 40' long by 28' wide.

Analysis

Road Capital Code 9924.6 has funded the design and permitting for these two bridges to be replaced. Based on design, and permit feedback, Chinook Engineering has prepared an engineer's estimate to replace both structures with new pre-engineered steel bridges. Attached is a project summary from PNW Services, Inc. identifying a total estimated project

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cost of $1,157,088.53. This summary includes the engineer's estimate and preliminary construction drawings.

Upon BOD funding approval, this project will be issued for bids to contractors and brought back to the BOD for contract award.

Proposal
Authorize $1,157,088.53 from Roads to purchase and install 2 pre-engineered steel bridges.

Request
Request $1,157,088.53 from Roads to purchase and install 2 pre-engineered steel bridges.

Motion
Move that the Board of Directors approve the allocation of $1,157,088.53 from Roads for purchasing and installing 2 pre-engineered steel bridges.

Finance Committee Approval

Motion

Approved: _____ Not Approved: _____ Finance Committee

Board of Directors Approval

Motion

Approved: _____ Not Approved: _____ SVCA Board of Directors

PNW
SERVICES, INC.

February 16, 2025

Sudden Valley Community Association
Attn: Michael Bennett
4 Clubhouse Circle
Bellingham, WA 98229

RE: Project Scope Letter
2025 Bridge Funding

PNW is providing this overall project scope letter to SVCA for Roads Capital Code 9924.6. This is a change order requesting funding approval to purchase and install 2 bridges.

Summary of anticipated costs:

Construction & Management	
- Bridge Construction – Chinook Engineering, Engineer's Estimate dated 2-14-25	$956,758.66
- Utility Companies – Allowance for construction coordination with utility relocations to hang from bridge – power and communications.	$50,000.00
- Construction Management – PNW Services, Inc. – Per Attached	$38,340.00
- Engineering Oversight – Allowance for oversight and design coordination during construction.	$6,800.00
Total Design & Permitting	**$1,051,898.66**
Contingency at 10%	$105,189.87
Total with Contingency	**$1,157,088.53**

Please let me know if you have any questions, or if you would like any further information.

Sincerely,

Tyler Andrews
President

Chinook Engineering

Stream Crossing Fish Passage Construction Cost Estimate

Polo Park Dr 28' x 40' Steel bridge on sheet pile foundation and 14'x70' Roy Road Bridge on shallow concrete

Project Name: Polo Park Dr Crossing Beaver Creek Bridge Costs 1-30-2025
Chinook Project #: 24476
Date: 02/14/25
Estimate By: Jay S. Kidder, PE
Stream: Beaver Creek, Tributary to Lake Whatcom

			5 month Construction Inflation Factor Applied to Construction Total		3.00%	
Description	**Unit**	**Quantity**	**Cost**	**Amount**		**Sub Total**
Mobilization / Site Preparation						
Mobilize	L.S.	1	$25,000	$25,000		
Access and signage	L.S.	1	$2,000	$2,000		
Road Bypass	L.S.	1	$2,000	$2,000		
Erosion Control	L.S.	1	$5,000	$5,000		
Dewater	L.S.	1	$5,000	$5,000		
Fish Removal	L.S.	1	$2,000	$2,000		
Utilities	LS	1	$40,000	$40,000		
MOBILIZATION / SITE PREP SUB TOTAL						$81,000
Excavation						
Grubbing and disposal on site	ACRES	0.22	$35,000	$7,643		
Tree falling stumps to remain on site	EA	12.00	$1,200	$14,400		
Excavation, at bridge side slope and rip rap removal	C.Y.	346.67	$140	$48,533		
Demolition and disposal culvert	EA	1.00	$4,000	$4,000		
Concrete & Asphalt Cut and Disposal Break and haul	TON	105.32	$55	$5,793		
EXCAVATION SUB TOTAL						$80,369
Bridge Installation Polo Park Dr						
Bridge 28' x 40' HDG ASTM A992 steel or conc.slab Own	SF	1120	$150	$168,000	owner supplied	
Bridge sheet pile foundation and wing walls	LBS	25000	$4.50	$112,500		
Bridge HDG steel backwall	LBS	210	$10.70	$2,247		
Install, crane or dual excav.	L.S.	1	$12,000	$12,000		
Backfill and Compaction subgrade	C.Y.	337	$140	$47,185		
Geotextile Tensar	SY	156	$35.00	$5,444		
RECP Coir 90 ounce roll blankets	SY	622	$15.00	$9,333		
Fill Road base crushed gravel	Ton	232	$110	$25,553		
HMA 4" total thickness	Ton	290	$210	$60,978		
Paint Striping	LS	1	$500	$500		
Polo Park Dr Bridge SUB TOTAL						$443,740
Bridge Installation Roy Road Maint Yard Bridge						
Bridge weathering steel ASTM A 588 14'x70'	SF	980	$172.00	$168,560	owner supplied guard and handrails	
Concrete footers	CY	7	$2,000.00	$13,333		
Subgrade crushed gravel	CY	31	$180.00	$5,616		
Install, crane high lift	L.S.	1	$12,000	$12,000		
Fill Road base crushed gravel	C.Y.	108	$160	$17,333		
HMA 4" total thickness	Ton	11	$210	$2,246		
Bridge Removal and Disposal	EA	1	$4,000			
Roy Road Maint Yard Bridge SUB TOTAL						$219,089
Channel Work HPA Req'd						
Excavation Channel bed and replace bankward	C.Y.	144	$85.00	$12,278		
Streambed Gravel, Fishmix grade	C.Y.	144	$160.00	$23,111		
Revegetation, Polo Park Dr	LS	1	$3,000.00	$3,000		
Revegetation, Roy Road Maint. Yard	LS	1	$3,000.00	$3,000		
CHANNEL WORK SUBTOTAL						$41,389
CONSTRUCTION TOTAL						$865,587
Sales Tax applied separately		~~9.00%~~ 8.8%			~~$~~	~~81,829~~ $76,171.66
Admin/Planning		0.00%			$	-
Engineering Construction Contract and assist bidding		0.00%			$	-
Engineering Construction Management		0.00%			$	-
Soils Lab Testing	$	15,000			$	15,000
PROJECT TOTAL with inflation for 5 months						~~$962,416~~ $956,758.66

In providing opinions of probable construction cost, the Client understands that the Consultant (Chinook Engineering) has no control over the cost or availability of labor, equipment or materials, or over market condition or the Contractor's method of pricing, and the consultant's opinions of probable construction costs are made on the basis of the Consultant's professional judgment and experience. The Consultant makes no warranty, express of implied that the bids or the negotiated cost of the Work will not vary from the Consultant's opinion of probable construction cost.

Sudden Valley Community Association

2025 Bridge Construction

PNW Estimate - Bid Package, Permitting, and Construction Management

Task	Description	Hours	Estimated Cost
Design Oversight			
	Under separate proposal.	0	
	Total Estimated Design Oversight Hours	0	**$ -**
Permitting			
	Under separate proposal.	0	
	Total Estimated Permitting Cost	0	**$ -**
Contractor Bids			
	Prepare bid documents.	6	
	Issue bid package to contractors, answer bid questions, and provide contract award recommendation to SVCA.	5	
	Total Estimated Bid Package Hours	11	**$ 1,485.00**
Construction Management			
	Prepare construction contract, and contract execution oversight.	3	
	Utility company coordination.	40	
	Construction Management - Assumes 9 week construction period, 45 working days, at 5 hours per day average oversight.	225	
	Contract closeout.	5	
	Total Estimated Construction Management Hours	273	**$ 36,855.00**
	Total Estimated		**$ 38,340.00**

PLACE CONCRETE UNDERPIN AT LOCATIONS IDENTIFIED BY EOR THAT ARE VOIDED

REPLACE AND PLACE BOULDERS TO BUILD A STREAM BANK GEOMETRY

Detail 1 — 1 / C-A.2
NTS

UNDERPIN

Detail 2 — 2 / C-A.2
NTS

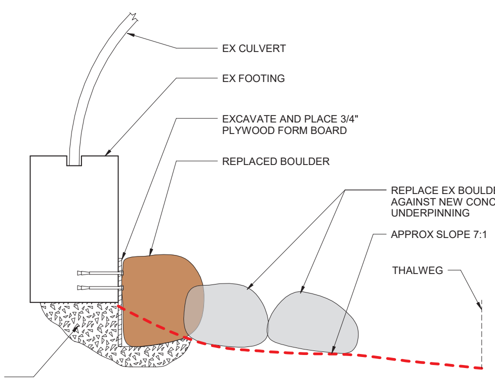
UNDERPIN

USE BOULDERS HERE TO PLACE AGAINST THE STREAM

Detail 3 — 3 / C-A.2
NTS

GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN THE DRY.
2. STREAM MUST BE DIVERTED AWAY FROM ALL EXCAVATION AND CONCRETE WORK.
3. FISH REMOVAL MAY BE NECESSARY DEPENDING ON DEWATERING METHOD.
4. DO NOT ALLOW ANY GREEM CONCRETE OR DISCHARGE OF HIGH PH WATER TO ENTER INTO STREAM WATER.
5. HARVEST BOULDERS AS PERMITTED US AND DS AND WITHIN CULVERT TO SET AGAINST THE LEFT AND RIGHT CONCRETE FOOTINGS.
6. COVER ALL CONCRETE WITH STABLE BOULDERS AS NEAR AS POSSIBLE WITH 30 BOULDERS. INFORM EOR WHEN 30 BOULDERS IS NOT ENOUGH TO WORK WITH.
7. ALL BOULDERS SHALL BE NATIVE OR IMPORTED ROUNDED HABITAT BOULDERS OF APPROXIMATELY 36"-48" ON THE SECONDARY AXIS.



EX Culver Foundation Section — 4 / C-A.2
NTS

HARVEST BOULDERS UP AND DOWNSTREAM TO PLACE AGAINST SIDE SLOPES. DO NOT OVER HARVEST AND OVER SMOOTH STREAMBED. EOR TO DIRECT. CONSIDER APPROXIMATELY 30 BOULDERS TO BE MOVED OR REPLACED ALONG LEFT BANK. INSPECT RIGHT BANK FOR UNDERCUTS AND REPAIR SIMILAR.

Detail 5 — 5 / C-A.2
NTS

COVER CONCRETE WITH BOULDERS IF AVAILABLE

UNDERPIN

THALWEG

INSPECT AND UNDERPIN AS REQUIRED IF EROSION IS PRESENT

Detail 6 — 6 / C-A.2
NTS

Chinook Engineering
860 Windrose Drive
Coupeville, WA 98239
P: 360.672.5528 www.chinook-engineering.com

REV	DATE	ISSUE	BY
1	12/11/2024	Issued for Permit Pre-application	JSK

1" Bar at Original Scale

PRELIMINARY

See Sheet CVR.2

Sudden Valley Community Bridge Replacement and Stream Crossing Improvements 2025

SHEET TITLE: Austin Creek Culvert Underpinning Details

FILE NO: 24475 / 24476
SCALE: AS INDICATED
DATE: 01/21/2024
DRAWN BY: ER
CHECKED BY: JSK

SHEET NUMBER: C-A.2
15 OF 18

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CAPITAL REQUEST MEMO

To: **Sudden Valley Community Association Board of Directors**

From: **Michael Bennett, General Manager**

Date: **February 27th, 2025**

Subject: **Capital Request – Addendum to 2024 – Roads Project #9924.6 – Bridge Funding**

Purpose

To request change order from Feb. 2024 Bridge Designs Project Approval for 2025 funding approval from Roads Capital Code 9924.6 to purchase and install 2 bridges & repair culvert # 4.

Background

SVCA's 2025 capital budget includes $1,202,425.00 to purchase and install 2 bridges. These 2 bridges are being designed and permitted under Roads Capital Code 9924.6.

- Area Z Access Bridge (Road Bridge #2 – Roy Road Maintenance Yard Bridge) – This bridge is located off Honeycomb Lane to access Area Z and the community garden. This project will replace the existing bridge with a new 70' long by 14' wide pre-engineered steel bridge. The current bridge is at the end of its life cycle and has a 3-ton weight rating. Before the bridge rating reduction, the Maintenance Department heavily used this bridge. It allows them to access Gates 9, 13, and 3 without going on Lake Louise Road. This saves substantial time during snow events and heavy equipment access (backhoe, loader, roadside mower, etc.). This bridge provides the only public access to the Area Z Community Garden plot.

- Culvert #4 Replacement with Bridge (renaming to Road Bridge #5) – This is an 8' diameter corrugated metal arch culvert at the end of its life cycle; the bottom is rusted out and failing. Also, during the 2021 November flood event, the existing culvert didn't have the capacity to handle Beaver Creek's water volume, which led to a road failure, causing an emergency road repair. It is located on Polo Park Drive between the intersections of Lost Lake Lane and Sunnyside Lane. The new bridge will be 40' long by 28' wide.

Analysis

Road Capital Code 9924.6 has funded the design and permitting for these two bridges to be replaced. Based on design, and permit feedback, Chinook Engineering has prepared an engineer's estimate to replace both structures with new pre-engineered steel bridges. Attached is a project summary from PNW Services, Inc. identifying a total estimated project

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cost of $1,157,088.53. This summary includes the engineer's estimate and preliminary construction drawings.

Upon BOD funding approval, this project will be issued for bids to contractors and brought back to the BOD for contract award.

Proposal
Authorize $1,157,088.53 from Roads to purchase and install 2 pre-engineered steel bridges.

Request
Request $1,157,088.53 from Roads to purchase and install 2 pre-engineered steel bridges.

Motion
Move that the Board of Directors approve the allocation of $1,157,088.53 from Roads for purchasing and installing 2 pre-engineered steel bridges.

Finance Committee Approval

Motion

Approved: _____ Not Approved: _____ Finance Committee

Board of Directors Approval

Motion

Approved: _____ Not Approved: _____ SVCA Board of Directors

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CAPITAL REQUEST MEMO

To: **Sudden Valley Community Association Board of Directors**

From: **Jo Anne Jensen, General Manager**

Date: **February 22nd, 2024**

Subject: **Capital Request – 2024 Bridge Designs**

Purpose
To request funding for the 2024 Bridge Designs project.

Background
The Ten-Year Road & Drainage Plan calls for work to begin on the replacement of the Area Z Access Bridge (Bridge #2) and Culvert #4 in 2024. Sudden Valley Community Association (SVCA)'s 2024 budget includes $31,200.00 for design and permitting of the Area Z Access Bridge (Bridge #2) but does not include funding for Culvert #4 because the final Ten-Year Plan was not available when the budget was finalized. Work on Culvert #4 was estimated by Impact Design at $86,500 but the estimate didn't include utility coordination. PNW's summary dated February 6, 2024, (attached) identifies specifics for both bridges and summarizes the proposed expenses.

Analysis
PNW's attached summary recommends SVCA proceed with design and permitting of both locations in 2024. Both locations cross Beaver Creek and are in close proximity. This creates efficiency:

- One set of permits can apply to both locations.
- 1 hydrologic analysis can be completed and applied to both locations.
- Geotechnical borings can be completed at the same time saving mobilizations, and only 1 report will need to be prepared.
- Bridge designs are anticipated to be similar allowing shared details – utility hangers, etc.

PNW's summary identifies a projected design and permitting budget of $131,003.84 to complete both locations. SVCA's 2024 budget included $31,200.00 for Area Z Access Bridge as noted above leaving a difference of $99,803.84. We propose to take the needed $99,803.84 from the budget allocation designated for culvert replacement in 2024.

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4 Clubhouse Circle Bellingham, WA 98229
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Proposal

Authorize $131,003.84 from Roads per PNW's summary dated February 6th, 2024, for design and permitting to replace the Area Z Access Bridge, and Culvert #4, and authorize the General Manager to execute contracts with the following vendors:

- Chinook Engineering – Design and Permitting
  - $38,810.00 – Area Z Access Bridge
  - $38,810.00 – Culvert #4 Replacement with Bridge
- $13,000.00 NW Geologic PLLC – Geotechnical Exploration

Motion 1

Move that the SVCA Board of Directors approve the allocation of $131,003.84 from the 2024 Capital Budget for Roads for design and permitting per PNW's summary dated February 6, 2024, for the 2024 Bridge Design project.

Motion 2

Move that the SVCA Board of Directors authorize the General Manager to execute contracts with Chinook Engineering per their proposals dated February 2nd, 2024, with total amounts not to exceed $77,620.

Motion 3

Move that the SVCA Board of Directors authorize the General Manager to execute a contract with NW Geologic PLLC per their proposal dated February 5, 2024, with a not to exceed amount of $13,000.00.

Approvals

Motion 1

Approved: ✓ Not Approved: _____ SVCA Finance Committee

Approved: _____ Not Approved: _____ Board of Directors

Signed: [signature] Date: 2-22-24
ELECTED, SVCA Board President

Motion 2

Approved: ✓ Not Approved: _____ SVCA Finance Committee

Approved: _____ Not Approved: _____ Board of Directors

Signed: [signature] Date: 2-22-24
ELECTED, SVCA Board President

Motion 3

Approved: ✓ Not Approved: _____ SVCA Finance Committee

Sudden Valley Community Association

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4 Clubhouse Circle Bellingham, WA 98229
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Approved: _____ Not Approved: _____ Board of Directors

Signed: _____ Date: 2-22-24

ELECTED, SVCA Board President

PNW
SERVICES, INC.

February 6, 2024

Sudden Valley Community Association
Attn: Michael Brock
4 Clubhouse Circle
Bellingham, WA 98229

RE: Project Scope Letter
2024 Bridge Designs

PNW is providing this overall project scope letter to SVCA for the 2024 Bridge Designs project. This project is proposed to replace an existing bridge, and replace a large culvert with a bridge. Specifically:

- Area Z Access Bridge (Road Bridge #2) – This bridge is located off Honeycomb Lane to access Area Z. The bridge is used by the maintenance department regularly for quick access to gates 3, 9, 13, and by community members to access the community gardens. The bridge is at the end of its life cycle, and currently has a 5-ton weight rating. This substantially limits the vehicles that can travel over it, and with continued deterioration the weight rating capacity will continue to decline.
- Culvert #4 Replacement with Bridge (Road Bridge #5) – Currently this is an 8' diameter corrugated metal arch culvert identified in SVCA's new 10-Year Road and Drainage plan prepared by Impact Design that needs replacement. The new 10-year plan identifies replacing this large culvert with a pre-engineered metal bridge. This is located on Polo Park Drive between the intersections of Lost Lake Lane and Sunnyside Lane. The bridge didn't have capacity to handle the water volume during the November, 2021, flood event leading to a road failure and emergency repair. In addition, the culvert is substantially rusted out.

SVCA's 2024 budget identified $31,200.00 for design and permitting of the Area Z Access Bridge. The 2024 budget was based on a memo from Impact Design dated 6-30-23 that gave SVCA budget parameters until the 10-year plan was completed. When this memo was prepared, Impact Design didn't know Culvert #4 needed replacing. The memo identified rebuilding Deer Run Lane, and replacing many other storm drainage culverts in 2024, see attached. The new 10-year plan that was finished in October, 2023, is planned to be incorporated into SVCA's 2025 budget, and be incorporated into the reserve study update in 2024. Reference attached for Impact Design's 10-year summary table.

The 10-year plan update included a preliminary engineer's estimate for replacing Culvert #4, see attached. This budget identified $86,500.00 for design/permitting, and under construction, line 26, identified a LWWSD (Lake Whatcom Water & Sewer) budget of $30,000 for DEA (Developer Extension Agreement) and oversight. LWWSD's participation is required to relocate the waterline. A portion of the LWWSD budget is needed for establishing the DEA, and completing design review. The balance is related to construction oversight.

Bridge design and permitting requires a substantial amount of time – geotechnical borings and soils report, survey, design, and permitting. All of this combined could take up to a year on average. The permitting is the largest time component, and will likely take 6 months if not longer to complete. As stated previously, Culvert #4 failed during the November, 2021, flood event because it didn't have the capacity to allow the required volume of water through. When this occurred, it washed out part of Polo Park Drive, and required an emergency repair. PNW is recommending a portion of the SVCA 2024 Road/Drainage budget be used to supplement the design funds needed for Culvert #4. Impact Design has indicated their overall plan has some flexibility, and if all the 2024 culverts proposed aren't completed, they would shift some projects to the next available year when more funds are available. Impact Design agrees that potentially shifting a few of the smaller culverts to a later year is better than shifting the design for replacing Culvert #4. The basic logic is, if a small culvert fails it is simple to fix generally speaking. However, if Culvert #4 failed, it would close a major road, Polo Park Drive, and require this year long process to start plus ordering a bridge and construction.

The intent with completing the design and permitting for both projects in 2024 is to allow the projects to go to bid during January or February of 2025. This would allow contract award by March, and enough time to order pre-engineered bridges to arrive for summer 2025 construction as planned. In addition, design and permitting both projects at once has a substantial savings for SVCA as the same permits will apply to both locations, same hydrologic analysis, etc. A few details regarding each bridge proposed:

- Area Z – Road Bridge #2
    - The new bridge design will slightly lengthen the existing span and straighten the bridge out so there isn't a turn onto the bridge from Honeycomb Lane.
    - There is one utility hanging on this bridge. It will be temporarily suspended during construction, and then mounted onto the new bridge.
- Culvert 4 Replacement with Bridge (Road Bridge #5)
    - The creek will have a diversion installed for construction, and the existing corrugated metal culvert will be removed.
    - A channel will be excavated to be similar in width to the existing creek above and below the current culvert. Utilities will be temporarily supported during this phase.
    - A bridge will be constructed and utility lines will be hung from the bridge. This will include water, communications, and power lines.
    - During construction Polo Park Drive will be closed and traffic detoured around.

Summary of anticipated costs:

Design & Permitting Scope	
- Chinook Engineering – Area Z Access Bridge	$38,810.00
- Chinook Engineering – Culvert 4 Replacement to SVCA Bridge #5	$38,810.00
- NW Geologic PLLC – Geotechnical Borings and Design Report	$13,000.00
- PNW Services, Inc. – Per Attached	$7,425.00
- Permit Fees Allowance	$4,000.00

- LWWSD – DEA & Design (Construction oversight not included) Allowance per Attached	$12,049.40
- Utility Companies – Allowance for design reviews and coordination to hang utilities on bridges. (Construction assistance not included)	$5,000.00
Total Design & Permitting	**$119,094.40**
Contingency at 10%	$11,909.44
Total with Contingency	**$131,003.84**
Contractor Bids & Construction	
- Under Separate Proposal	

Chinook Engineering completed design and permitting for SVCA's 8th Hole Golf Course Bridge Replacement project in 2022. A comparison quote was requested from Impact Design, and their estimate matched what was in the 10 Year plan. Chinook Engineering provided 2 quotes for completing the geotechnical scope of work ($25,000 Palmer Geotechnical Consultants, and $45,000 Aspect Engineering). PNW reached out to NW Geologic who has previously done a lot of geotechnical work for SVCA, and requested a quote. The quote came back substantially less and is included above. Chinook Engineering's proposal assumes design and permitting is completed for both bridges at the same time, and that is why the proposals match. The total amount of work required was determined, and then split between the 2 locations.

Please let me know if you have any questions, or if you would like any further information.

Sincerely,

Tyler Andrews
President

Technical Memorandum

SVCA 10-Year Capital Plan 2023 & 2024 Projects

June 30th, 2023

Tyler Andrews
PNW Services, Inc.
PO Box 30498
Bellingham, WA 98228

Re: Technical Memorandum
SVCA 10-Year Capital Plan, 2023 Culvert Projects & 2024 Culvert/Road Projects.

The purpose of this Technical Memorandum is to give recommendations for the 2023 and 2024 infrastructure improvement projects and to give a preliminary cost estimate as a means to review the planned yearly budget amounts. Based on Impact Designs completed field investigation of the Sudden Valley Community Association roadway and drainage infrastructure for the 10-year Capital Improvements project, we found a total of 58 drainage culverts that appear to be in critical condition.

2023 Culvert Projects:

The following 10 culverts were found to be in the greatest critical condition and are recommended to be replaced this year. We estimate each project will have a cost of approximately $10,000 - $15,000 each depending on material/diameter/length. This gives a project budget range of $100,000 - $150,000 total.

Culvert ID	Zone Number	Road Name	Approximate Address	Culvert Length (ft.)	Culvert Diameter (in.)	Culvert Material
11	Zone 5	Big Leaf Ln	15 Big Leaf Ln	55	18/12	CMP
15	Zone 5	Shetland Ct	19 Tumbling Water Dr	58	12	CMP
17	Zone 5	Shetland Ct	3 Shetland Ct	41	18	CMP
FND 13	Zone 13	Yearling Pl	5 Meadow Ct	28	12	CMP
28	Zone 13	Granite Cir	67 Polo Park Dr	46	24	CMP
403	Zone 9	Polo Park Dr	230 Polo Park Dr	59	18	CMP
162	Zone 3B	Kinglet Ct	188 Sudden Valley Dr	41	12	CMP
FND 67	Zone 1	Gate 1 Mailboxes	Gate 1 Mailboxes	39	12	CMP
63	Zone 2	Lake Louise Dr	52 Lake Louise Dr	70	18	CMP
408.2	Zone 2	Larkspur Ct	7 Larkspur Ct	17	12	CMP

2024 Culvert Projects:

The following 48 culverts were all found to have a critical barrel condition and should be prioritized for the 2024 maintenance projects. All the culverts below appear to be simple conveyance pipes for roadway crossings, and do not have fish bearing capacity. We estimate each project will cost approximately $10,000 - $15,000 each depending on material/diameter/length. This gives a project a budget range of $490,000 - $735,000 total.

Culvert ID	Zone Number	Road Name	Approximate Address	Culvert Length (ft.)	Culvert Diameter (in.)	Culvert Material
66	Zone 5	Louis View Dr	20 Louise View Dr	62	18	CMP
67	Zone 5	Sweetclover Cir	12 Sweetclover Cir	48	12	Inlet-Concrete Pipe/Outlet-CMP
58	Zone 5	Louis View Dr	1 Catkin Ct	48	12	CMP
1	Zone 13	Polo Park Dr	150 Polo Park Dr	54	18	CMP
78	Zone 13	Sunnyside Ln	29 Sunnyside Ln	50	18	CMP
431	Zone 13	Lost Lake Ln	29 Lost Lake Ln	75	18	CMP
27	Zone 13	Misty Ridge Ct	66 Polo Park Dr	39	12	CMP
404	Zone 9	Polo Park Dr	230 Polo Park Dr	79	18	CMP
205	Zone 3A	Spring Rd	15 Spring Rd	40	24	CMP
406	Zone 3A	Rocky Ridge Dr	30 Rocky Ridge Dr	109	12	CMP
171	Zone 3B	Stable Ln	32 Stable Ln	32	12	CMP
178	Zone 3B	Canyon Ct	23 Canyon Ct	39	12	CMP
176	Zone 3B	Tawny Cir	24 Lost Fork Ln	50	12	CMP
432 433	Zone 3B	Strawberry Cyn Ct	13 Strawberry Cyn Ct	46	12 18	CMP
103	Zone 3C	Amberland Way	142 Harbor View Dr	42	24	CMP
99	Zone 3C	Plum Ln	28 Plum Ln	51	12	CMP
214	Zone 3C	Maple Ct	46 Maple Ct	67	18	CMP
126	Zone 3D	Sudden Valley Dr	1 Sudden Valley Dr	120	18/12	CMP/CPP
89	Zone 3D	Indian Ridge Ct	39 Sudden Valley Dr	86	12	CMP
FND 38	Zone 3D	Indian Meadow Ct	1 Indian Meadow Ct	35	12	CMP
118	Zone 3D	Harbor View Dr	46 Harbor View Dr	43	18	CMP
117	Zone 3D	Harbor View Dr	54 Harbor View Dr	35	18	CMP
120	Zone 3D	Harbor View Dr	10 Harbor View Dr	42	18	CMP
FND 30	Zone 3D	Harbor View Dr	99 Harbor View Dr	39	18	CMP
109	Zone 3D	Green Hill Rd	55 Green Hill Rd	41	18	CPP/CMP
111	Zone 3D	Harbor View Dr	113 Harbor View Dr	40	18	CMP
122	Zone 3D	Rocky Ridge Dr	2 Rocky Ridge Dr	29	18	CMP
FND 48	Zone 1	Par Ln	20 Par Ln	55	12	CMP
147	Zone 1	Par Ln	20 Par Ln	20	12	CMP

441	Zone 1	Jubilee Ln	3 Jubilee Ln	59	12	CMP
148	Zone 1	Par Ln	11A Par Ln	189	12	CMP
415	Zone 1	Birdie Ln	28 Windward Dr	53	12	CMP
143	Zone 1	Inlet Cir	26 Longshore Ln	82	12	CMP
144	Zone 1	Inlet Cir	26 Longshore Ln	31	12	CMP
145	Zone 1	Spinnaker Ln	17 Marina Dr	72	12	CPP/CMP
FND 49	Zone 1	Marina Dr	17 Marina Dr	40	12	CMP
157	Zone 1	North Point Dr	5 North Point Dr	30	12	Green PVC/CMP
FND 52	Zone 1	Sanwick Pt Ct	36 North Point Dr	43	12	Concrete Pipe/CPP
81	Zone 2	Lake Louise Dr	1 Sparrow Ct	61	18	CMP
408.1	Zone 2	Larkspur Ct	7 Larkspur Ct	19	12	CMP
409	Zone 2	Whispering Cedars	Whispering Cedars Entrance	N/A	24	CMP
410	Zone 2	Lake Louise Dr	22 Lake Louise Dr	120	12	CMP
203	Zone 2	Lake Louise Dr	14 Lake Louise Dr	61	18	CMP
FND 61	Zone 2	Marigold Dr	37-30 Marigold Dr	283	12	CMP
75	Zone 2	Marigold Dr	43 Marigold Dr	40	12	CMP
FND 45	Zone 2	Sunflower Cir	23 Sunflower Cir	20	12	CMP
445	Zone 2	Lake Louise Dr	20 Lake Louise Dr (Outlet)	200	12	CMP
FND 62	Zone 2	Barn View Ct	3 Barn View Ct	83	12	CMP

2024 Road Projects:

Impact Design recommends that in addition to drainage improvement projects, at least one major asphalt overlay road project should be considered yearly. For the 2024 construction season Impact Design recommends Deer Run Lane should be overlayed. We estimate overlay projects will cost $4.00 - $5.00 per square foot. This gives the overlay of Deer Run Lane a project budget range of $180,000 - $225,000.

Overall Conclusions

Should all culvert and roadway projects we have recommended for the 2024 construction season be completed, we estimate the total costs to be in the $670,000 - $960,000 range. The cost estimate per culvert replacement, and cost per square foot of asphalt overlay is based on local historical data alone, and no engineered design has been done. Prior to construction, an engineering analysis and civil/stormwater engineering drawings should be completed. Based on this analysis a yearly budget of $900,000 to $1,000,000 appears to be adequate to catch up with and maintain SVCA's infrastructure for the next 3-5 years.

Based on our current progress we expect to have the first draft of the SVCA 10-Year Capital Improvements Plan by the end of August.

Respectfully,

6-30-2023

Scott Goodall, MS, PE
Principal
Impact Design, LLC

10 Year CIP Summary Table

Year	CATEGORY	Corresponding Table	Project Name	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
2023	CONSTRUCTION	Table 2	2023 Culverts Remove and Replace	$ 133,750.00										
	DESIGN	Table 3	2024 Culverts Remove and Replace	$ 15,000.00										
2024	CONSTRUCTION	Table 3	2024 Culverts Remove and Replace		$ 580,200.00									
	CONSTRUCTION	Table 9	2024 Repair and Overlay Deer Run Lane		$ 225,445.52									
	DESIGN	-	2025 Area Z Bridge Replacement		$ 30,000.00									
	DESIGN	Table 8	2025 Culvert 4 Remove and Install Bridge		$ 86,500.00									
	DESIGN	-	Programatic Permit Reivew and Application		$ 15,000.00									
2025	CONSTRUCTION	-	2025 Area Z Bridge Replacement			$ 175,000.00								
	CONSTRUCTION	Table 8	2025 Culvert 4 Remove and Install Bridge			$ 981,178.00								
	DESIGN	Table 4	2026 Culverts Remove and Replace			$ 15,000.00								
	DESIGN	Table 9	2026 Road Repairs and Overlays			$ 20,000.00								
2026	CONSTRUCTION	Table 4	2026 Culverts Remove and Replace				$ 701,300.00							
	CONSTRUCTION	Table 9	2026 Road Repairs and Overlays				$ 178,969.34							
	DESIGN	Table 8	2027 Culvert 24 Remove and Install Bridge				$ 77,850.00							
2027	CONSTRCUTION	Table 8	2027 Culvert 24 Remove and Install Bridge					$ 883,060.20						
	DESIGN	Table 8	2028 Culvert 22 Remove and Replace					$ 86,500.00						
	DESIGN	-	5 Year CIP Review					$ 17,000.00						
2028	CONSTRUCTION	Table 8	2028 Culvert 22 Remove and Install Bridge						$ 981,178.00					
	DESIGN	Table 8	2029 Culvert 23 Remove and Replace						$ 86,500.00					
2029	CONSTRUCTION	Table 8	2029 Culvert 23 Remove and Install Bridge							$ 981,178.00				
	DESIGN	Table 5	2030 Culverts Remove and Replace							$ 10,000.00				
	DESIGN	Table 9	2030 Road Repairs and Overlays							$ 20,000.00				
2030	CONSTRUCTION	Table 5	2030 Culverts Remove and Replace								$ 257,000.00			
	CONSTRUCTION	Table 9	2030 Road Repairs and Overlays								$ 467,117.56			
	DESIGN	Table 6	2031 Culverts Remove and Replace								$ 10,000.00			
	DESIGN	Table 9	2031 Road Repairs and Overlays								$ 20,000.00			
2031	CONSTRUCTION	Table 6	2031 Culverts Remove and Replace									$ 125,200.00		
	CONSTRUCTION	Table 9	2031 Road Repairs and Overlays									$ 564,996.96		
	DESIGN	Table 8	2032 Culvert 54 Remove and Install Bridge									$ 86,500.00		
2032	CONSTRUCTION	Table 8	2032 Culvert 54 Remove and Install Bridge										$ 981,178.00	
	DESIGN	Table 7	2033 Culvert Remove and Replace										$ 10,000.00	
	DESIGN	Table 9	2033 Road Repairs and Overlays										$ 10,000.00	
2033	CONSTRUCTION	Table 7	2033 Culvert Remove and Replace											$ 88,800.00
	CONSTRUCTION	Table 9	2033 Road Repairs and Overlays											$ 537,176.20
	DESIGN	-	2034-2044 10 Year CIP											$ 150,000.00
Totals				**$ 148,750.00**	**$ 937,145.52**	**$ 1,191,178.00**	**$ 958,119.34**	**$ 986,560.20**	**$ 1,067,678.00**	**$ 1,011,178.00**	**$ 754,117.56**	**$ 776,696.96**	**$ 1,001,178.00**	**$ 775,976.20**