

From: Joel Tax joel@reservedataanalyst.com
Subject: RE: Proposal Request from Reserve Data Analyst
Date: December 12, 2024 at 12:48 PM
To: charlie mayfield chasmayfield@gmail.com



Hi Charlie, I have added this to my schedule and should have completed within the next two weeks. To answer your questions please see my comments below:

- **What needs to be done (overlay or chip seal)?** A chip seal is simply a sealcoat with some aggregate added it is meant to replace a sealcoat *not* an overlay/resurfacing of the roads. It does the same thing as a sealcoat but with aggregate added some have the opinion that it last longer (6-8 years is typically referred). Note that it has been my experience that it typically lasts right about 6-year but is much more expensive than the sealcoat so I do not recommend from a budget standpoint as it is simply the much more expensive option (again not right or wrong). Additionally, I have never worked with a community that was happy with a chip seal due to aggregate causing issues with riding bicycles and motorcycles on it as well as the aggregate that gets spit up every time it is driven over (after the initial few months when it is brand new). Additionally, I have never seen a chip seal extend the road life out further than a sealcoat would, both are intended to maximize the useful life of the road but 30 years is the upper range of what I typically see for an Overlay, 35 years is rare to be able to do an Overlay (typically a significant amount of patching is needed before an Overlay or more commonly total removal of the asphalt is needed which increases the cost significantly) and I have never seen a 40 years old road which did not have to be totally torn up and rebuilt (a very expensive option).
- **When it should be done?** I have the been budgeted for an Overlay at 30 years of age in the reserve study which is the upper limit of what I typically see (fore just an Overlay with no significant patching. It is important to remember that everything in the reserve study is when we recommend the money be fully allocated towards the project not when you do the project. You should be taking advice from your asphalt Vendor for when they feel comfortable and feel it is time to do an Overlay. Every Vendor will have different opinions (there are some Vendors do not do Overlays and only do replacement projects – which tends to be more profitable for them). There is nothing wrong with forgoing an Overlay project, but it is typically significantly more expense (\$4.80-\$5.50 is common) and is typically needed right about 35-37 years of age. From a money perspective I cannot recommend this as it is simply the more expensive option.
- **How much will it cost?** I am typically seeing \$2.85 per square foot for an Overlay however as roads deteriorate and more patching is needed (each patch is often around \$6 per sf) the overall cost goes up from the necessary patching before an overlay can be done. My best guess is that this is what is going on with your roads currently and I would expect this to continue for several years but typically around 35 years of age the Vendors then state they are no longer willing to do an Overlay and instead must replace the road at about twice the expense of an Overlay. Communities that continue to push out the road project even further end of having to have all the aggregate under the road dug out (vs. just replenishment and graded) at, again, a much higher expense (often in excess of \$6 per square foot). So, I would suggest you continue to work with your Asphalt Vendor and ask for updated quotes annually as they do annual crack sealing of the roads. I would incorporate this into the reserve study as the cost change. Again, there are different opinion of and different comfort level between Vendors so we will want to take into account whatever the opinion of the particular Vendor you are working with, provides (Vendors will have different manpower, different equipment, different levels of experience, etc. which all play into the opinions on the matter). I would expect the costs to go up significantly each year though (there will be inflation but the roads typically deteriorate significantly each year

Version: Draft1

ID	Component Description	Install/Alloc. Year	Replace Year	Useful Life (UL)	Adjust / Delay(D)	Remaining UL	Quantity	Qty. Type	Cost Per Qty.	% Replace	Current Cost	% Significance	
											Totals:	\$182,493	100%
1001	Asphalt - Overlay/Resurface	1995	2025	25	0		28,688 sf		\$3.80	100.0%	\$108,932	59.7%	
1002	Asphalt - Seal Coat	1995	2025	5	0		28,688 sf		\$0.32	100.0%	\$9,053	5.0%	
1005	Benches (wood) - Replace	2000	2025	25	0		1 ea		\$668.97	100.0%	\$669	0.4%	
1006	Concrete Surfaces (mailboxes) - Replace	2008	2033	25	8		28 sf		\$19.56	100.0%	\$548	0.3%	
1004	Irrigation Backflow Valve - Replace	1995	2045	50	20		1 ea		\$1,572.81	100.0%	\$1,573	0.9%	
1008	Irrigation Controllers - Replace	2010	2025	15	0		1 ea		\$743.37	100.0%	\$743	0.4%	
1007	Irrigation Electrical Panel - Replace	1995	2030	35	5		1 ea		\$1,467.96	100.0%	\$1,468	0.8%	
1009	Irrigation Piping - Replace	1995	2035	40	10		8,640 sf		\$3.30	100.0%	\$28,497	15.6%	
1010	Landscaping - Refurbish	2005	2025	20	0		1,624 sf		\$4.55	100.0%	\$7,698	4.2%	
1011	Lights (landscape) - Replace	1995	2025	25	0		3 ea		\$185.86	100.0%	\$558	0.3%	
1012	Mailbox Cluster - Replace	2008	2033	25	8		2 ea		\$2,359.22	100.0%	\$4,718	2.6%	
1014	Newspaper Structures - Replace	1995	2045	50	20		2 ea		\$1,887.37	100.0%	\$3,775	2.1%	
1015	Parking Posts (wood) - Replace	1995	2025	25	0		10 ea		\$104.85	100.0%	\$1,049	0.6%	
1016	Signage (entry/masonry) - Refurbish	1995	2035	40	10		2 ls		\$1,153.39	100.0%	\$2,307	1.3%	
1018	Signage (entry/wood) - Replace	2015	2035	20	10		2 ea		\$1,494.17	100.0%	\$2,988	1.6%	
1017	Signage (road) - Replace	2012	2032	20	7		2 ea		\$288.35	100.0%	\$577	0.3%	
1019	Storm Drain System - Local Repairs	2022	2025	5	2	0	1 ls		\$7,339.78	100.0%	\$7,340	4.0%	

Maintenance & Inspections

The Client stated that they have been working with the Vendors for ongoing maintenance of components. Note that a lack of ongoing maintenance at any point in the past or future can significantly reduce the useful life of components. It is assumed that all proper maintenance has and will be completed per the component specific Vendor's recommendations (unless otherwise noted). It is assumed all inspections will be completed per local statute and are assumed to be paid for from the operational account, as reported by the Client (unless otherwise noted).

Comments on Asphalt Surfaces

FY 2025 Update - The Client has stated that there is a discussion about chip sealing the asphalt roads instead of doing an Overlay soon. It has been our experience that chip seals are not cost effective and typically last 5-7 years (slightly longer than a sealcoat) and are not meant to be in place of an Overlay of the asphalt surfaces. Chip sealing is simply a sealcoat with some aggregate added and is an alternative to a sealcoat *not* an Overlay. It has also been our experience that chip seals typically have a negative impact on market appeal in communities; usually due to the higher noise from the roadways, loose aggregate on the roads which can cause chips in vehicles paint/windows, and making riding bikes/motorcycles more hazardous).

Note that the most common mistake we see when budgeting for asphalt is pushing out the overlay project too far in time due to the high expense. The typical outcome of this scenario is that Vendors will no longer be able to complete an overlay project due to advanced deterioration and there must be a replacement project completed (often at approximately twice the expense of an overlay project). Deterioration to asphalt typically rapidly increases in the later years of its useful life so delaying an Overlay project is often an extremely costly budgeting mistake.

*** Note that the Client obtained bids in 2023 to do an Overlay of the asphalt roads. It has been our experience that the cost will increase significantly each year the Overlay project is pushed out due to more areas in need of patching/repair before an Overlay can be done. Note this deterioration and patching will typically increase the cost to such a degree that a replacement project will then become the most cost effective option (usually 5-7 years). ***

We suggest obtaining annual bids from the Vendor(s) to keep up on the cost and timing of when the Vendor will continue to feel an Overlay is still doable. Note that each vendor will have a different opinion and comfort level as to when an Overlay is not the appropriate (based on their comfort level, guarantee, experience level, manpower, equipment, etc.). Should the Client wish to budget for a Replacement project versus an Overlay (based on the Asphalt Vendor recommendations or Client preference) this reserve study, or a future update should be revised to reflect that decision.

Excluded Components

Unless noted otherwise the below components have been excluded from funding in this reserve study. Note that the inclusion of any of these items later via a revision or update to this study will impact the funding strategies developed by the Reserve Analyst.

Long Life Components

If properly constructed the below components are long life components which, currently, have no predictable useful life, predictable remaining useful life, or predictable associated replacement costs. As these components age and a history of repair/replacement needs becomes evident or there are failures then we suggest reevaluating these systems and having them inspected by qualified vendors. Future updates to the reserve study should be revised accordingly.

> Storm Water System Replacement - We suggest working with a qualified vendor for regular maintenance (e.g., sediment removal) and periodic inspections. At this time, we have no predictable remaining life for this system; it has been our experience that with regular maintenance and periodic inspections repairs can be made before larger scale failures. As the system ages Vendor recommendations should be incorporated into updates to the reserve study.

Asphalt - Overlay/Resurface

Asset ID	1001	Age Adjust +/-	
Funded?	Yes	Delay Funding?	No
Group	Site Components	Repeat Count Limit	
Category	Asphalt Surfaces	Next Replacement Year	2025
Install / Allocate Year	1995	Units	28,688 sf
Useful Life (UL)	25	Unit Cost	\$3.80
Remaining UL	0	% Replace	100.0%
Cost Source	Client Supplied	Total Current Cost	\$108,932

Fully Funded Balance - 10 Year Projections (year end)									
2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
\$4,510	\$9,335	\$14,493	\$20,000	\$25,875	\$32,137	\$38,806	\$45,902	\$53,447	\$61,464

Photo Inventory

Comments
<p>Appears to be deteriorating at a rate typical of its age. As routine maintenance, keep surface clean, ensure that drains are clean and free flowing, repair cracks and clean oils stains promptly. Best to plan for eventual intervals of resurfacing (overlay).</p> <p>If properly built, asphalt surfaces will deteriorate from the top down, which only requires the replacement of a layer of asphalt, or preferably the application of a layer on top of the existing asphalt (overlay). The asphalt overlay not only provides a new paving surface for a fraction of the cost of rebuilding the entire surface, but it is the only preventive maintenance technique that adds structural value while extending a pavement's service life. Cost estimate assumes a 2 inch overlay over existing surfaces.</p> <p>Cost estimated based on Client obtained bid for \$106,918 in fiscal year 2023 and inflated to current estimate.</p>

Client Provided Replacement History		
Year	Cost	Source
Comments On Replacement History		

*Projected Replacement Years	
Year	Future Cost
2025	\$108,932
2050	\$257,434

*Next year then only within timeframe of this study.

Asphalt - Seal Coat

Asset ID	1002	Age Adjust +/-	
Funded?	Yes	Delay Funding?	No
Group	Site Components	Repeat Count Limit	
Category	Asphalt Surfaces	Next Replacement Year	2025
Install / Allocate Year	1995	Units	28,688 sf
Useful Life (UL)	5	Unit Cost	\$0.32
Remaining UL	0	% Replace	100.0%
Cost Source	Reserve Analyst Research	Total Current Cost	\$9,053

Fully Funded Balance - 10 Year Projections (year end)									
2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
\$1,874	\$3,879	\$6,023	\$8,311	\$10,753	\$2,226	\$4,607	\$7,153	\$9,871	\$12,771

Photo Inventory

Comments

The primary reason to seal coat is to protect the pavement from the deteriorating effects of sun and water, which causes the asphalt to harden, or oxidize; the pavement turns brittle. The seal coat provides a waterproof membrane which slows the oxidation process and helps the pavement shed water, preventing the water to infiltrate the base material.

Proper drainage is vital for the longevity of asphalt surfaces. Standing water can seep through the asphalt and get into the sub-base and sub-grade below, significantly weakening the structural integrity of the road and causing premature failure. Oil spills eat through the asphalt seal and should be cleaned up between seal coats. Power washing is recommended annually where needed and treated as an operating expense. Cost estimate includes crack filling and 2 coats are to be applied. We typically recommend funding for this component at the same time as the Overlay/Replacement project for cost efficiency with the Vendor.

No sealcoat present on the roadways surfaces at this time. We have set this coincide with the asphalt overlay component.

Client Provided Replacement History		
Year	Cost	Source
Comments On Replacement History		

*Projected Replacement Years	
Year	Future Cost
2025	\$9,053
2030	\$10,753
2035	\$12,771
2040	\$15,168
2045	\$18,014

*Next year then only within timeframe of this study.

Projected Annual Expenditures Spreadsheet

Component Description	Asset ID	Useful Life	Remain. UL	Annual Totals							
				Current Cost	2025	2026	2027	2028	2029	2030	
Asphalt - Overlay/Resurface	1001	25	0	\$108,932	\$108,932						
Asphalt - Seal Coat	1002	5	0	\$9,053	\$9,053						\$10,753
Benches (wood) - Replace	1005	25	0	\$669	\$669						
Concrete Surfaces (mailboxes) - Replace	1006	25	8	\$548							
Irrigation Backflow Valve - Replace	1004	50	20	\$1,573							
Irrigation Controllers - Replace	1008	15	0	\$743	\$743						
Irrigation Electrical Panel - Replace	1007	35	5	\$1,468							\$1,743
Irrigation Piping - Replace	1009	40	10	\$28,497							
Landscaping - Refurbish	1010	20	0	\$7,698	\$7,698						
Lights (landscape) - Replace	1011	25	0	\$558	\$558						
Mailbox Cluster - Replace	1012	25	8	\$4,718							
Newspaper Structures - Replace	1014	50	20	\$3,775							
Parking Posts (wood) - Replace	1015	25	0	\$1,049	\$1,049						
Signage (entry/masonry) - Refurbish	1016	40	10	\$2,307							
Signage (entry/wood) - Replace	1018	20	10	\$2,988							
Signage (road) - Replace	1017	20	7	\$577							
Storm Drain System - Local Repairs	1019	5	0	\$7,340	\$7,340						\$8,717

Projected Annual Expenditures Spreadsheet

Component Description	Asset ID	2031	2032	2033	2034	2035	2036	2037	2038	2039
Asphalt - Overlay/Resurface	1001	\$0	\$734	\$6,934	\$0	\$70,792	\$0	\$0	\$0	\$0
Asphalt - Seal Coat	1002					\$12,771				
Benches (wood) - Replace	1005									
Concrete Surfaces (mailboxes) - Replace	1006			\$721						
Irrigation Backflow Valve - Replace	1004									
Irrigation Controllers - Replace	1008									
Irrigation Electrical Panel - Replace	1007									
Irrigation Piping - Replace	1009					\$40,199				
Landscaping - Refurbish	1010									
Lights (landscape) - Replace	1011									
Mailbox Cluster - Replace	1012			\$6,213						
Newspaper Structures - Replace	1014									
Parking Posts (wood) - Replace	1015									
Signage (entry/masonry) - Refurbish	1016					\$3,254				
Signage (entry/wood) - Replace	1018					\$4,215				
Signage (road) - Replace	1017		\$734							
Storm Drain System - Local Repairs	1019					\$10,353				

Projected Annual Expenditures Spreadsheet

Component Description	Asset ID	2040	2041	2042	2043	2044	2045	2046	2047	2048
Asphalt - Overlay/Resurface	1001	\$28,710	\$0	\$0	\$0	\$0	\$58,576	\$0	\$0	\$0
Asphalt - Seal Coat	1002	\$15,168					\$18,014			
Benches (wood) - Replace	1005									
Concrete Surfaces (mailboxes) - Replace	1006									
Irrigation Backflow Valve - Replace	1004						\$3,130			
Irrigation Controllers - Replace	1008	\$1,245								
Irrigation Electrical Panel - Replace	1007									
Irrigation Piping - Replace	1009									
Landscaping - Refurbish	1010						\$15,317			
Lights (landscape) - Replace	1011									
Mailbox Cluster - Replace	1012									
Newspaper Structures - Replace	1014						\$7,511			
Parking Posts (wood) - Replace	1015									
Signage (entry/masonry) - Refurbish	1016									
Signage (entry/wood) - Replace	1018									
Signage (road) - Replace	1017									
Storm Drain System - Local Repairs	1019	\$12,297					\$14,605			