Growth Rate Information

Sources: Average Daily Traffic Volumes (2000-2019)

Source: West Reserve Drive Corridor Planning Study, October 2021

Annual average growth rate:

2.40%

Table 3: Historic AADT and Growth Rate

	2000	2010	G	rowth Rat	e
Count Site	2000 AADT	2019 AADT	2000- 2009	2010- 2019	2000- 2019
W. Reserve Dr., west of Country Way	10,700	19,853	5.2%	1.5%	3.1%
W. Reserve Dr., west of Whitefish Stage Rd.	13,230	18,323	2.3%	1.4%	1.6%
W. Reserve Dr., east of Whitefish Stage Rd.	8,730	13,574	3.8%	1.0%	2.2%
W. Reserve Dr., west of US 2	9,340	15,281	2.6%	2.7%	2.5%
Average Growth Rate for W. Reserve Count S	ites		3.4%	1.7%	2.4%

Figure 8 shows the data graphically. The recommended 2.4% growth rate is also consistent with growth rates used for other planning-level studies in the area. The Kalispell Move 2040 Transportation plan projects 2.4% annual growth in households in the Kalispell area and 1.9% annual growth in employment over the next 20 years.

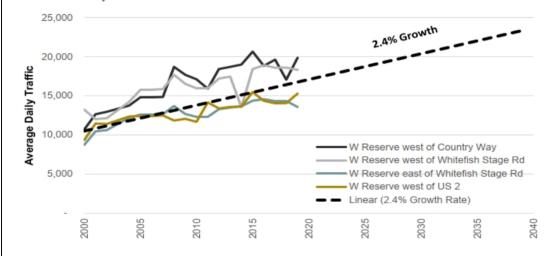


Figure 8: Average Daily Traffic Volumes (2000-2019)

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24-Hr Volume Estimates

Sources: Source: West Reserve Drive Corridor Planning Study, Appendix 2

4.4 COVID Traffic Impacts

A 12-hour traffic count was collected at each study intersection during October 13°-15°, 2020. This count data was compared to recent historic counts (count dates shown in Table 6), to understand how the COVID-19 pandemic has impacted existing traffic volumes. The historic counts were collected by MDT over a 48-hour period and represent typical traffic conditions (i.e., typical weekday traffic while school was in session). Attachment 1 provides a summary of historic and October 2020 count data.

Figure 10 compares the traffic volume profile for historic traffic counts versus October 2020 traffic counts at the three intersections. The historic 48-hour traffic count data was averaged across the two weekdays and is shown as a dashed line in the figure.



Figure 10: Comparison of Historic vs October 2020 Traffic Counts

From 8:00-9:00 am, October 2020 traffic volumes are lower at all three intersections. From 5-6pm, existing and historic volumes are about the same at Whitefish Stage Rd. and US 2 while US 93 has lower volumes compared to historic data.

The highest hourly volumes compared to instolic data.

The highest hourly volumes generally occurred from 7:30-8:30 am for the AM peak hour and 4:45-5:45 pm for the PM peak hour. Table 7 takes a closer look at total entering volume (TEV) during the AM and PM peak hours and the percent change observed.

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	Start	End
AM peak hour:		
PM peak hour:	4:45 PM	5:45 PM

		AM PEA	K HOUR	PM PEA	K HOUR
Int ID	Intersection	2020 TEV	% of Day	2020 TEV	% of Day
1	W Reserve/US 93	3185	8.190%	3570	8.964%
2	W Reserve/Home Depot	1712	7.126%	1765	8.409%
3	W Reserve/Hutton Ranch	1632	7.126%	1895	8.409%
4	W Reserve/Country Way	1620	6.063%	1900	7.853%
5	W Reserve/Country Way N	1566	6.360%	1666	7.625%
6	W Reserve/Whitefish Stage	1850	6.360%	2040	7.625%

TEV - total entering volume

Average:	6.871%	Average:	8.147%	
		J		

2025 Traffic Volumes, AM and PM Peak Hour

Notes: These volumes have not been seasonally adjusted Intersection turning movement volumes were field-coelected in 2018, 2019, and 2020. Existing year (2020) obumes were grown to base year 2025 assuming an annual gro

2020 Tr	affic Volumes, from West Reserv	e Corridoi	Study, O	ct 2021																					
							AM PEA	K HOUR											PM PEA	K HOUR					
Int ID	Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	W Reserve/US 93	30	295	180	125	480	360	400	415	40	335	385	140	120	645	275	120	460	415	350	215	75	325	450	120
2	W Reserve/Home Depot	10	1	30	15	1	70	85	590	45	30	780	55	25	5	80	35	5	100	95	455	60	60	770	75
3	W Reserve/Hutton Ranch	15		60					625	7	75	850		25		240					545	25	180	880	
4	W Reserve/Country Way	30	0	4	0	0	7	4	645	35	3	890	2	10	0	1	0	0	1	0	710	125	3	1050	0
5	W Reserve/Country Way N	1		3					610	0	2	950		0	0	0					710	1	0	955	
6	W Reserve/Whitefish Stage	230	65	20	25	100	110	30	415	170	35	615	35	220	75	20	45	125	135	80	555	120	40	600	25

2025 T	raffic Volumes, apply 2.4% annua	l growth	to 2020 vc	olumes																					
							AM PEA	K HOUR											PM PEA	K HOUR					
Int ID	Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	W Reserve/US 93	35	335	205	145	545	410	455	470	50	380	435	160	140	730	310	140	520	470	395	245	85	370	510	140
2	W Reserve/Home Depot	15	5	35	20	5	80	100	665	55	35	880	65	30	10	95	40	10	115	110	515	70	70	875	85
3	W Reserve/Hutton Ranch	20		70					705	10	85	960		30		275					620	30	205	1000	
4	W Reserve/Country Way	35	0	5	0	0	10	5	730	40	5	1005	5	15	0	5	0	0	5	0	800	145	5	1185	0
5	W Reserve/Country Way N	5		5					695	0	5	1070		0		0					800	5	0	1085	
6	W Reserve/Whitefish Stage	260	75	25	30	115	125	35	470	195	40	690	40	250	85	25	55	145	155	95	625	140	50	680	30

2045 Traffic Volumes, AM and PM Peak Hour

Notes: These volumes have not been seasonally adjusted Future year (2040) volumes were grown to year 2045 assuming an annual growth rate of 2.4%. Source: West Reserve Drive Corridor Planning Study, Appendix 2

	affic Volumes, from West Reserv	C COTTIGO	,, -				AAA DEA	K HOUR											PM PEA	KHOHD					
							AIVI PEA	K HUUK											PIVI PEA	K HUUK					/
Int ID	Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	W Reserve/US 93	50	475	290	200	770	580	645	665	65	540	615	225	195	1035	440	195	740	665	560	345	120	520	725	195
2	W Reserve/Home Depot	15	2	50	25	2	110	135	950	70	50	1255	90	40	10	130	55	10	160	155	730	95	95	1240	120
3	W Reserve/Hutton Ranch	25		95					1015	10	120	1370		40		385					875	40	290	1415	
4	W Reserve/Country Way	50	0	5	0	0	10	5	1050	55	5	1430	4	15	0	2	0	0	2	0	1140	200	5	1685	0
5	W Reserve/Country Way N	2		5					980	0	4	1530	0	0		0					1140	2	0	1535	
6	W Reserve/Whitefish Stage	370	105	30	40	160	175	50	660	275	55	990	55	355	120	30	70	200	215	130	890	195	65	965	40

2045 T	raffic Volumes, apply 2.4% annua	l growth i	to 2040 va	lumes																					
							AM PEA	K HOUR											PM PEA	K HOUR					
Int ID	Intersection	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
1	W Reserve/US 93	60	535	330	230	870	655	730	745	75	610	695	255	220	1170	500	220	835	750	635	390	140	590	820	220
2	W Reserve/Home Depot	20	5	60	30	5	125	155	1070	80	60	1415	105	50	15	150	65	15	185	175	825	110	110	1395	140
3	W Reserve/Hutton Ranch	30		110					1145	15	140	1550		50		435					990	50	330	1595	
4	W Reserve/Country Way	60	0	10	0	0	15	10	1180	65	10	1615	5	20	0	5	0	0	5	0	1285	230	10	1900	0
5	W Reserve/Country Way N	5		10					1105	0	5	1725		0		0					1285	5	0	1730	
6	W Reserve/Whitefish Stage	420	120	35	50	185	200	60	745	310	65	1110	65	400	140	35	80	230	245	150	1005	220	75	1085	50

West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection Traffic Operations Results - Intersection improvements at Hutton Ranch and Whitefish Stage

		YEAR 2025			YEAR 2045	
		2025 Base			2045 Base	
	AM	PM	24-hr estimate ¹	AM	PM	24-hr estimate ¹
Travel Time (hr)	215	306	3,436	1,357	1,802	20,929
Total Delay (hr)	105	158	1,733	534	687	8,096
Fuel Used (gal)	170	206	2,499	440	558	6,624

		2025 With Project	ct ²		2045 With Projec	t ²
	AM	PM	24-hr estimate ¹	AM	PM	24-hr estimate ¹
Travel Time (hr)	168	208	2,497	678	1,057	11,425
Total Delay (hr)	59	81	924	339	383	4,818
Fuel Used (gal)	162	191	2,347	345	448	5,259

¹ The 24-hr estimate is calculated based on the following formula: Vehicle volumes counted in 2020 indicate AM peak hour traffic volumes are approximately 6.9% of daily traffic and PM peak hour traffic volumes are approximately 8.1% of daily traffic.

² The project includes widening of West Reserve Drive between Hutton Ranch Road and Mission Trail from 3-lanes to 5-lanes, and improvements at 2 signalized intersections (Hutton Ranch Road, Whitefish Stage Road.

	W€	Fu est Reserve Drive: Hut	iel Savings & CO ₂ Re ton Ranch Rd. to W	duction hitefish Stage Rd. In	tersection	
	Fuel Saved (gallons)	Vehicle Fuel Price (Gasoline, \$2020) ¹	Vehicle Fuel Savings	CO ₂ Reduced (Metric Tons) ²	Social Cost of CO ₂ (2020\$/Metric Ton) ³	Value of CO ₂ Avoided
2022						
2023						
2024						
2025	51,435	\$2.52	\$129,512	457	\$56.00	\$25,598
2026	71,997	\$2.54	\$183,159	640	\$57.00	\$36,471
2027	92,559	\$2.57	\$238,230	823	\$58.00	\$47,709
2028	113,121	\$2.60	\$294,236	1,005	\$60.00	\$60,318
2029	133,683	\$2.62	\$350,252	1,188	\$61.00	\$72,470
2030	154,244	\$2.68	\$414,021	1,371	\$62.00	\$84,988
2031	174,806	\$2.77	\$484,135	1,554	\$63.00	\$97,871
2032	195,368	\$2.80	\$546,456	1,736	\$64.00	\$111,119
2033	215,930	\$2.82	\$608,840	1,919	\$65.00	
2034	236,492	\$2.84	\$671,839	2,102	\$66.00	\$138,712
2035	257,054	\$2.85	\$732,842	2,284	\$67.00	
2036	277,615	\$2.87	\$796,954	2,467	\$69.00	\$170,235
2037	298,177	\$2.89	\$861,200	2,650	\$70.00	\$185,493
2038	318,739	\$2.92	\$930,526	2,833	\$71.00	\$201,117
2039	339,301	\$2.92	\$990,911	3,015	\$72.00	\$217,106
2040	359,863	\$2.94	\$1,059,035	3,198	\$73.00	\$233,461
2041	380,425	\$2.96	\$1,126,475	3,381	\$74.00	\$250,182
2042	400,986	\$2.97	\$1,189,080	3,564	\$75.00	\$267,267
2043	421,548	\$2.99	\$1,262,277	3,746	\$77.00	\$288,465
2044	442,110	\$3.02	\$1,336,172	3,929	\$78.00	
2045	462,672	\$3.05			\$79.00	
Total	5,398,125		\$15,617,301	47,973		\$3,397,667

The forecasted gasoline fuel price is based on the EIA Annual Energy Outlook 2022, converted from 2021 dollars to 2020 dollars using the BEA Implicit Deflator.
 For the CO₂ analysis, assumed 8,887 grams of CO2 per gallon of gasoline based on factors provided by the EPA fact sheet EPA-420-F-14-040.
 The US DOT BCA Guidance published in March 2022 listed the social cost of carbon per metric ton between \$52 and \$85, to be discounted at a 3% Discount Rate.

2025 was used a baseline value for analysis purposes. Its value was not used in the BCA calculations as construction will be active and users will not realize the full emissions benefit until 2026.

	Fatality and Injuries (Without Improvements)	Fatality and Injuries (With Improvements)	Fatality and Injuries (Net Change)	Value of Fatality/Injury Crash (2020\$)	PDO Crashes (Without Improvements)	PDO Crashes (With Improvements)	PDO Crashes (Net Change)	Value of PDO Crash (2020\$)	Value of Net Safe Benefits (2020\$)
2022									
2023									
2024									
2025		3.69	0.25	\$210,300		7	0.52	\$4,600	\$54,
2026		3.80	0.26	\$210,300		7	0.54	\$4,600	\$56
2027		3.91	0.26	\$210,300		7	0.56	\$4,600	\$58
2028		4.02	0.27	\$210,300	8	8	0.57	\$4,600	\$59
2029		4.14	0.28	\$210,300	8	8	0.59	\$4,600	\$61
2030		4.27	0.29	\$210,300	9	8	0.61	\$4,600	\$63
2031	4.69	4.39	0.30	\$210,300		8	0.62	\$4,600	\$65
2032		4.52	0.31	\$210,300	9	8	0.64	\$4,600	\$67
2033		4.66	0.32	\$210,300	9	9	0.66	\$4,600	\$70
2034		4.80	0.33	\$210,300		9	0.68	\$4,600	\$72
2035		4.94	0.34	\$210,300	10	9	0.70	\$4,600	\$74
2036		5.09	0.35	\$210,300		9	0.72	\$4,600	\$76
2037		5.24	0.36	\$210,300		10	0.74	\$4,600	\$79
2038		5.39	0.37	\$210,300	11	10	0.76	\$4,600	\$81
2039		5.55	0.38	\$210,300		10	0.79	\$4,600	\$84
2040		5.72	0.40	\$210,300	11	10	0.81	\$4,600	\$87
2041	6.30	5.89	0.41	\$210,300	12	11	0.83	\$4,600	\$89
2042		6.06	0.42	\$210,300		11	0.86	\$4,600	\$92
2043		6.24	0.44	\$210,300	12	11	0.88	\$4,600	\$95
2044		6.43	0.45	\$210,300		12	0.91	\$4,600	\$98
2045 Total		6.62 105.39	0.46 7.25	\$210,300	13 209.39	12 194.43	0.94 14.95	\$4,600	\$101
ı otal	112.64	105.39	7.25		209.39	194.43	14.95		\$1,593

	Fatalities & Injuries (Baseline)			PDO Crashes (Proposed
Year			Improvements)	Improvements)
2024	3.82	7.22	3.58	6.71
2044	6.88	12.65	6.43	11.74
Annual Growth Rate	3%	3%	3%	3%

		2024 Baseline			2024 Proposed		2	2044 Baseline			2044 Proposea	1
Element	Predicted Av	erage Crash Frequency (c	rashes/year)	Predicted A	verage Crash Frequency (rashes/year)	Predicted Average	hes/year)	Predicted Average Crash Freque (crashes/year)			
	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO	Total	FI	PDO
Intersection 1	3.39	1.1	2.29	3.39	1.1	2.29	6.19	2.1	4.1	6.19	2.1	4.1
Intersection 2	1.35	0.52	0.83	0.74	0.52	0.83	2.17	0.88	1.29	1.19	0.88	1.29
Intersection 3	1.76	0.63	1.13	1.76	0.63	1.13	3.3	1.1	2.2	3.3	1.1	2.2
Intersection 4	1.13	0.42	0.71	0.62	0.42	0.71	1.7	0.66	1.04	0.93	0.66	1.04
Intersection 5	0.31	0.16	0.15	0.17	0.16	0.15	0.51	0.27	0.24	0.28	0.27	0.24
Intersection 6	3.1	0.99	2.11	2.35	0.75	1.6	5.65	1.87	3.78	4.29	1.42	2.87
Intersection Total	11.04	3.82	7.22	9.03	3.58	6.71	19.52	6.88	12.65	16.18	6.43	11.74

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Total Community Blowle Miles - Base Case		min		6430 6430	4.728	6828	6990	5.004	5.140 5.140	1.209	5.259	5.072	1.500	1.726 5.8	17 5,910	4.075	4.204	4.00	4.00	1400 4.1	14 6.007	7.002	2.00	7.532 7.	OUT TAIN	1907	1.912	8.140	E212 1	007 EAS	1.07	100a	9227 9227	1.02	1621 1 1621 1	9.824 100 9.824 100	102 10213	1 10.840	1046	10 904	11.13a 11.13a	11.372	11.40
Total Community Boys In Miles - Build Case Change in Total Community Boys In Miles		Miles Miles			4.728	6326		1,016		5.209 16,876 11,626	17,230	17384 12322	17 Mar 12 12 JUN 12	1365 18.7 14.09 12.90	12 19.138 56 13,176	14532	10,761	39.3ws 14.931	20.7% 21. 14.327 16	1,235 21.6 1,630 16.9	83 22.161 09 15.264	22.60E	20.084 15.905	20.573 20 16.261 16	007 7.605 071 26.579 066 16.956	7807 25,096 17,290	25,628					400a											11,41
Side Brondood Boyde Miles - Bale Care Side Brondood Boyde Miles - Bull Care		man man		4,210 6,210	6,623	4,556 6,556	6,697	6,838	6,982	7,130 22,523	7.291	7,614	TSM 2	1752 7.W 1922 25.0	5 ASS	8,253 29,534	8.627 27.096	8.405 27.666	130 E	1975 47 1887 294	62 9.356 56 30.075	4552 20713	1.765 21.362	9761 10 10331 12	171 10.38a 700 11.391	10405 36099	10.829	11,098 11,098	11,291 11	ASD 11.71 ASD 11.71	1 12 00 2	12.276	12325	12,800	13,070 13	1.304 13.4 1.306 13.6	11954 128 11954	16,209	14109	16,814	15,129	15,668	15.23
Danie in Staffermannel Book Mile.		min												119 118			18.467			FR70 203		21.160		20 0kS 22			23.987																
Duny is facility to Miss.		min								27,619	27,998	28,589	M 360 24	100 10.0	21,041	31,738	12,408	11040	33,791 341	1900 21,2	13 26,917	34,737	37,012	38,304 39,	113 29:909	60,783	61,666																
		persons Sultar	9																																								
Remarkation factor Annual Rase Growth Easts Supplied on growth in Bright	de diserç		2.333																																								
Processing Character Production Councillate Product 1004 Production 1 State Council		amontaan amaa	261		10 100	11.190	11.000	11.626	11.872	12.723	12.179	TEME	12907 1	1179 12.4	13.76	16.002	16328	16401	16 900 15	120 10	175 70.900	16202	10.000	1670 17	292 1749	1860	18.612	18.801	19.791 2	ME 200	7 20.00	20871	21.312	21.762	22.222 2	22 AW1 23.1	100 23.60	m 25.110	25667	20.790	29.732	20.201	26.5
	CRARIN	penan			10,900	11,190	11,388	11,426	11,872	21,304	21,756 93,75			1,364 21,6 1984 10.1			25,183			AST2 27.		28,561		29.765 30 12.836 13			32,360 13,968	18,801	19,760	AE 202	20,000	20,871	21,312	21,762	22,323 2	20,441 21,1	130 21,60	A 20,150	20,669	25,740	26,733	26,261	26,8
										+.186	4.65	4,004	4714	10.1	** 10.410	10,430	14,855	r codd	11.000 11	.mv 113	10,000	13.304	tu mili	tonn 11	A 11.171	/1460	14.968																
	- I	min																																									
Charge in Stati Protections due to Protect of length of Protection Marie Sale Case Stati Protection Marie Sale Case Stati Protection Marie Sale/Case		man man			10 100	11.190	11.38a 11.38a	11.426 11.426	11.812	12.123	12.179 21.756 9.176	12460 22218	12 MOP 12 12 MOB 22 14 77 M	179 11.6 1346 21.6 1986 10.7	13.762 13 36.162 15 10.610	14.012 24.662 10.630	16.328	16A21 25.775 11086	16 NO 152 26,258 267	1288 193 6812 273 1387 118	76 15.90a 79 27.957 01 12.000	16.342 28.547	16.585 29.150 12.565	10.936 17. 29.746 30. 12.830 11.	293 17 AM 294 21 00A 301 13 277	1800 3146	18.412 32.360	18.801	19.798 19	AEI 202	7 20.600	20871	21.112	21.762	22.332 25 22.332 25	DAW1 20.1 DAW1 20.1	170 21464 170 21464	20.758	25448	25.792	26.732	29.295 29.295	3.00

	Pedestrian and Bicycle Benefits West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection												
	Annual Bicycle Trips (Without Project)	Annual Bicycle Trips (With Project)	Net Change in Annual Bicycle Trips	Net Change in Annual Bicycle-Miles Traveled		Value of Induced Bicycle Trips (2020\$)	Annual Pedestrian Trips (Without Project)	Annual Pedestrian Trips (With Project)	Net Change in Annual Pedestrian Trips	Net Change in Annual Pedestrian-Miles Traveled	Value of New Sidewalk (2020\$)	Value of Induced Pedestrian Trips (2020\$)	Total Value of Bicyclist and Pedestrian Benefits (2020\$)
2022													
2023													
2024													
2025	12,379	39,797	27,419		\$7,129		12,123	21,306		9,184		\$65,021	\$246,998
2026	12,640	40,638	27,998				12,379	21,756	9,378	9,378	\$1,876	\$66,394	\$252,214
2027	12,907	41,496	28,589	28,589			12,640	22,216	9,576	9,576	\$1,915	\$67,796	\$257,540
2028	13,179	42,372	29,193				12,907	22,685	9,778	9,778		\$69,227	\$262,978
2029	13,458	43,267	29,809				13,179	23,164	9,984	9,984	\$1,997	\$70,689	\$268,531
2030	13,742	44,180	30,438				13,458	23,653	10,195	10,195	\$2,039	\$72,182	\$274,201
2031	14,032	45,113	31,081	31,081	\$8,081	\$196,122	13,742	24,152	10,410	10,410	\$2,082	\$73,706	\$279,992
2032	14,328	46,066	31,738				14,032	24,662	10,630	10,630	\$2,126	\$75,262	\$285,904
2033	14,631	47,039	32,408				14,328	25,183		10,855	\$2,171	\$76,852	\$291,941
2034	14,940	48,032	33,092	33,092			14,631	25,715		11,084	\$2,217	\$78,474	
2035	15,255	49,046	33,791	33,791	\$8,786		14,940	26,258		11,318	\$2,264	\$80,132	\$304,400
2036	15,578	50,082	34,504	34,504		\$217,722	15,255	26,812	11,557	11,557	\$2,311	\$81,824	\$310,828
2037	15,906	51,139	35,233	35,233		\$222,320	15,578	27,379	11,801	11,801	\$2,360	\$83,551	\$317,392
2038	16,242	52,219	35,977	35,977			15,906	27,957		12,050		\$85,316	
2039	16,585	53,322	36,737	36,737	\$9,552		16,242	28,547	12,305	12,305	\$2,461	\$87,117	\$330,937
2040	16,936	54,448	37,512	37,512			16,585	29,150	12,565	12,565	\$2,513	\$88,957	\$337,925
2041	17,293	55,598	38,304	38,304			16,936	29,765		12,830	\$2,566	\$90,835	\$345,061
2042	17,658	56,772	39,113				17,293	30,394	13,101	13,101	\$2,620	\$92,753	\$352,347
2043	18,031	57,970	39,939				17,658	31,036	13,377	13,377	\$2,675	\$94,712	\$359,788
2044	18,412	59,194	40,783				18,031	31,691	13,660	13,660	\$2,732	\$96,712	\$367,385
2045	18,801	60,444	41,644	41,644		\$262,772	18,412	32,360	13,948	13,948	\$2,790	\$98,754	\$375,143
Total	322,935		715,300	715,300	\$175,151	\$4,513,545	316,257		239,585	239,585	\$45,127	\$1,696,265	\$6,443,706

For the CO₂ analysis, assumed 8,887 grams of CO2 per gallon of gasoline based on factors provided by the EPA fact sheet EPA-420-F-14-040. The US DOT BCA Guidan published in March 2022 listed the social cost of carbon per metric ton between \$52 and \$85, discounted at a 3% Discount Rate.

1 ength of bicycle trail (miles)		
260 Annualization Factor (Weekdays per Year)	- 1	
\$0.26 Recommended Value per Cycling Mile (Cycling Boulevard)	- 1	
\$0.10 Recommended Value per Pedestrian Mile (per additional foot of width of New Sidewal	k)	
2.00 Additional Width of Sidewalk (feet)		
\$6.31 Recommended Value per Induced Trip (Cycling)	- 1	
\$7.08 Recommended Value per Induced Trip (Pedestrian)	- 1	

		l.
2017 Ped/Bike Pop. In Project Area	% Pedestrians	% Bicyclists
2,65	9 70%	30%
1,89	4 66%	34%
2,59	1 86%	14%
Total	5,340	1,804
Weekday Average	42	14

[&]quot;Trail and Pathway Use in Flathead County, Montana", Headwaters Economics, 2017

-			
	Mode	Applicable Age Range ³	Recommended Value per Induced Trip (2020 S) ⁴
	Walking	Ages 20-74	\$7.08
	Cycling ²	Ages 20-64	\$6.31
	Facility T	ype	Recommended Value per Cycling Mile (2020 S) ¹
	Grade Cro		\$1.42
	Grade Cro		\$1.78
1		Cycling Lane	\$1.69
	Cycling Boulevard	"Sharrow"	\$0.26
l	Separated	Cycle Track	\$1.69
1	Improven	ient Type	Recommended Value per Person-Mile Walked (2020 S)
	Expand Signature foot of add	dewalk (per led Width) ²	\$0.10
	Improven	nent Type	Recommended Value per Use (2020 S)
		on Roadway nes ≥10,000	\$0.18
		Crossing on vith Volumes	\$0.46

Economic Impact

West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection

PRELIMINARY COST ESTIMATE

Project No.: TBD Date Prepared: March 25, 2022

Control No.: 10212000

Project Name: West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection IDC: 9.66%

imate		h Stage Rd. Interse	ction	IDC:	9.66%
	e Prepared By: Ed Toavs, P.E.				
	(Costs based on West Reserve Drive	Corridor Study a	nd 2022	cost updates)	
	Design and Eng	gineering Cost	ts		
	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
I.	PRELIMINARY ENGINEERING [9102]		-		
	MDT PE Costs (After Award)	1	LS	\$200,000.00	\$200,000
	IDC	9.66%			\$19,320
	SUBTOTAL				\$219,320
	Stipend Payments to DB Firm	2	EA	\$200,000.00	\$400,000
	Design Services (D-B Firm)	1	LS	\$1,779,578.42	\$1,779,578
	IDC	9.66%			\$210,547
	SUBTOTAL				\$2,390,126
I.	CONSTRUCTION ENGINEERING AND INSPECTION (CEI) SERVICES [9402]				
	MDT CEI Costs	1	LS	8%	\$1,443,655.11
	IDC	9.66%			\$139,457
	SUBTOTAL				\$1,583,112
	CEI Costs (D-B Firm)	1	LS	\$400,000.00	\$400,000
	IDC	9.66%			\$38,640
	SUBTOTAL	=			\$438,640
I.	INCIDENTAL CONSTRUCTION [9302]				
	Utility Design/Coordination	1	LS	\$302,644.56	\$302,645
	Utility Relocation Costs	1	LS	\$3,026,445.55	\$3,026,446
	IDC	9.66%			\$321,590
	SUBTOTAL	-			\$3,650,680
٧.	RIGHT-OF-WAY [9202]				
	Right-of-Way Design/Coordination	1	LS	\$185,108.93	\$185,109
	Right-of-Way Relocation Costs	1	LS	\$1,851,089.33	\$1,851,089
	IDC	9.66%			\$196,697
	SUBTOTAL	-			\$2,232,895
	DESIGN AND ENGINEERING COST SUBTOTAL	=			\$10,514,773
	Construct	tion Costs			
1.					
V.	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitefish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc.	1	LS	\$14,829,820.20	\$14,829,800
<i>I</i> .	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC	9.66%	LS	\$14,829,820.20	\$1,432,559
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitefish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL	9.66%	LS	\$14,829,820.20	
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitefish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL : CONTINGENCY	9.66%	LS %	\$14,829,820.20	\$1,432,559 \$16,262,359 \$1,626,236
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and Intersection improvement for Whitefish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC	9.66% = 1 9.66%			\$1,432,559 \$16,262,359 \$1,626,236 \$157,094
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL	9.66%			\$1,432,559 \$16,262,359 \$1,626,236 \$157,094 \$1,783,330
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and Intersection improvement for Whitefish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC	9.66%			\$1,432,559 \$16,262,359 \$1,626,236 \$157,094
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL	9.66% = 1 9.66% = =	%	10%	\$1,432,559 \$16,262,359 \$1,626,236 \$157,094 \$1,783,330 \$18,045,689
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL	9.66% = 1 9.66% = = = SUBTOTAL EST	% IMATED	10% MDT PE COST =	\$1,432,559 \$16,262,359 \$1,626,236 \$157,094 \$1,783,330 \$18,045,689
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL CONSTRUCTION COSTS SUBTOTAL	9.66% 1 9.66% = SUBTOTAL EST SUBTOTAL EST	% IMATED	10% MDT PE COST = MDT CE COST =	\$1,432,559 \$16,262,359 \$1,626,236 \$157,094 \$1,783,330 \$18,045,689 \$219,320 \$1,583,112
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL CONSTRUCTION COSTS SUBTOTAL	9.66% = 1 1 9.66% = = 5 SUBTOTAL EST SUBTOTAL EST STALEST STAL	% IMATED IMATED IMATED D MDT I	MDT PE COST = MDT CE COST = C & R/W COST =	\$1,432,559 \$16,262,359 \$1,626,236 \$157,094 \$1,783,330 \$18,045,689 \$219,320 \$1,583,112 \$5,883,575
	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelfish Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL CONSTRUCTION COSTS SUBTOTAL	9.66% 1 9.66% SUBTOTAL EST SUBTOTAL EST DITAL ESTIMATE SUBTOTAL ES	% IMATED IMATED IMATED D MDT II	MDT PE COST = MDT CE COST = C & R/W COST = D D-B PE COST =	\$1,432,559 \$16,262,359 \$1,626,236 \$17,094 \$1,783,330 \$18,045,689 \$219,320 \$1,583,112 \$5,883,575 \$2,390,126
ν. /Ι.	CONSTRUCTION [9502] Widening of W. Reserve Dr. and intersection improvement for Whitelifsh Stage Rd. Includes mobilization, project administration, scheduling, quality control, misc work, etc. IDC SUBTOTAL CONTINGENCY IDC SUBTOTAL CONSTRUCTION COSTS SUBTOTAL SUBTOTAL SUBTOTAL	9.66% = 1 9.66% = SUBTOTAL EST SUBTOTAL EST SUBTOTAL EST SUBTOTAL ES SUBTOTAL ES SUBTOTAL ES	% IMATED IMATED D MDT II TIMATEI TIMATEI	MDT PE COST = MDT CE COST = C & R/W COST =	\$1,432,559 \$16,262,359 \$1,626,236 \$157,094 \$1,783,330 \$18,045,689 \$219,320 \$1,583,112 \$5,883,575

TOTAL ESTIMATED DESIGN-BUILD CONSTRUCTION COST =

\$28,560,462

*Project improvements include widening of West Reserve Drive between Hutton Ranch Road and Mission Trail, signalized intersection improvements on West Reserve at Hutton Ranch and Whitefish Stage Road, and urban reconstruction of Whitefish Stage Rd. 0.5 miles north on the West Reserve - Whitefish Stage Intersection.

West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection Design-Build Project Cost Subtotal										
			Ξ		Ξ					
Project Segment	Con	struction Cost								
S3 Segment - Whitefish Stage Rd. Intersection	S	2,618,437	S	523,688	S	100,000				
R1 Segment - W. Reserve Drive (Hutton Ranch Rd. to Whitefish Stage Rd.)	S	9,366,987	s	1,873,397	S	1,063,022				
R4 Segment - Whitefish Stage Rd Urban Cross Section	S	1,275,891	s	405,179	s	250,950				
A Series - Access Management Improvements	s	470,000	Г		Г					
Right-of-Way Project Contingency			Г		5	300,000				
			П		Г					
Total (2022 dollars) - Without US 93 Intersection	\$	13,731,315	\$	2,802,264	\$	1,713,972				
Total (2023 dollars) - Using 8% Inflation	Ś	14,829,820	Ś	3.026,446	Ś	1.851.089				

MOT is currently experiencing high inflationary price increases in construction bidds. Material availability is limited due to supply chain issues causing material price occasion. One source for this REA that was used to assist in determination of construction price increases, including material excalation, is the February 2022 AGC Construction inflation Alert. This document which along with MOTs current bidding results provided a basis to estimate material excalation for this REA.

Reserve & Whitefish Stage - KAL & Reserve Dr - W of Whitefish Stg									
West Reserve Corridor: Cost - S3 Segment - Whitefish Stage Rd. Intersection									
Description of Work	Cost Estimate	_							
Base Construction Cost*	\$ 1,5	516,417							
Traffic Control+	s	75,821							
Mobilization+	\$	159,224							
Material Escalation***	s	262,720							
Contigency+	s								
Construction Cost Total	S 2/	618,437							
IC - Utilities++	s :	523,688							
Right-of-Way**	s	100,000							
See West Reserve Drive - Corridor Planning St.	tudy, Appendix 4 for planning level cost estimates	_							
** See Right-of-Way Costs Table									
*** Added 15% Material Price Escalation due to	o current availability								

Reserve & Whitefish Stage - KAL & Reserve Dr - W of Whitefish Stg West Reserve Corridor : Cost - R1 Segment - W. Reserve Dr. (Hutton Ranch Rd. to Whitefsh Stage Rd.)								
Description of Work Cost Estimate								
Base Construction Cost*	s	5,424,71						
Traffic Control+	\$	271,23						
Mobilization+	s	569,59						
Material Escalation***	s	939,83						
Contigency+	S	2,161,61						
Construction Cost Total	s	9,366,98						
IC - Utilities++	s	1,873,39						
Right-of-Way**	s	1.063.02						

Reserve & Whitefish Stage - KAL & Reserve Dr - W of Whitefish Stg West Reserve Corridor : Cost - R4 - Whitefish Stage Rd Urban Cross Section								
Description of Work	Co	st Estimate						
Base Construction Cost*	s	738.90						
Traffic Control+	s	36,94						
Mobilization+	S	77.58						
Material Escalation***	s	128,01						
Contigency+	S	294,43						
Construction Cost Total	s	1,275,89						
IC - Utilities++	\$	405,179						
Right-of-Way**	s	250.95						

"See West Reserve Drive - Corridor Planning Study, Appendix 4 for planning level co:
"See Right-of-Way Tub
"*Added 15% hasterial Price Excelation due to current availability
"*India preventage calculations as shown in the West Reserve Drive - Corridor Planni
"*Lived 20% percent of the Construction Total for Re-Childre, Also added \$\$150,000

West Reserve Corridor : Co	st - Access Management Improvements	
Improvement Option	Cost Estimate*	
A1 - Corridor Access Management Plan	S	50,000
A2 - Side Street and Approach Movement Restriction	s	300,000
A3 - Approach Consolidation near Whitefish Stage Rd.	s	120,000
Total	le	470.000

Reserve & Whitefish Stage - KAL & Reserve Dr - W of Whitefish Stg								
Project Right-Of-Way Costs								
Owner	Parcel	ROW Needed (Acres)	Value (per Acre)	Parcel Value	Project Segment			
R Thompson Farms*	41	0.83	\$ 304,920	\$ 253,084	R1			
Stillwater Corp**	3+	0.37	\$ 100,000	\$ 37,000	R1			
Semitool Inc**	3D	1.14	\$ 100,000	\$ 114,000	R1			
Semitool Inc**	3CA	0.39	\$ 100,000	\$ 39,000	R1			
Semitool Inc**	3C	1.45	\$ 100,000	\$ 145,000	R1 & R4			
Robyn Ward+	3A	0.05	\$ 150,000	\$ 7,500	R4			
BPA Substation+		0.07	\$ 150,000	\$ 10,500	R4			
R Thompson Farms**	4E+	2.81	\$ 100,000	\$ 281,000	R1 & R4			
R Thompson Farms*	4C	0.24	\$ 304,920	\$ 73,181	R1			
R Thompson Farms*	4D	0.24	\$ 304,920	\$ 73,181	R1			
R Thompson Farms*	4A	0.15	\$ 304,920	\$ 45,738	R1			
R Thompson Farms*	6	0.77	\$ 304,920	\$ 234,788	R1			
	SubTotal 1	8.51		\$ 1,313,972				
Contingency				\$ 300,000				
	SubTotal 2			\$ 1,613,972				
Segment S3 - Construction	Permits and Cost	to Cure Impacts		\$ 100,000				
	Total	•		\$ 1,713,972				

Kalispell Section Maintenance Costs FY 21	2022 Value	2025 Value
Labor	\$909,207	\$993,515.04
Equipment	\$416,147	\$454,735.06
Materials	\$435,455	\$475,833.44
Contracted Services	\$423,100	\$462,332.79
Total Cost	\$2,183,909	\$2,386,416.33
Kalispell Section Lane Miles	270	270
Cost Per Lane Mile	8089	8839
West Reserve Additional Lane Miles	2	2
Additional Annual Maintenance Cost Estimate	\$16,177	\$17,677

Maintenance Preservation Future Work - No Build Scenario	2022 Value	Future Value
Pavement Mill&Fill With Digouts in 2028	\$445,000.00	\$500,851.42
Pavement Mill&Fill With Digouts in 2038	\$445,000.00	\$673,102.43

Maintenance Presevation Future Work - Build Scenario	2022 Value	Future Value
Chip Seal in 2033 - 8 Years After Project Completion	\$306,000.00	\$387,631.64
O'lay and S&C in 2041 - 16 Years After Project Completion	\$1,897,200.00	\$3,044,449.06

Calculations & Inputs		
Unit Price - Seal & Cover Projects per sq ft	\$ 0.50	MDT Bid History
Unit Price - Overlay Seal & Cover Projects per sq ft	\$ 3.10	MDT Bid History
Project Area - West Reserve (sq ft)	468000	
Length (ft)	6000	
Width (ft)	78V	Vidth from West Reserve Corridor Study
Project Area - Whitefish Stage sq ft	144000	
Length	3000	
Width	48	Nidth from West Coı
Total Project Area (sq ft)	612000	

Benefit Cost Analysis - West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection Delay Time Savings, Fuel Savings, CO2 Reduction, Safety and Nonmotorized Benefits, and Operating Costs											
Yea	ar (1)	Delay Time Saved (Hours) (1)	Total Value of Time Saved (\$2020) (2)	Fuel Saved (gallons) (1)	Vehicle Fuel Savings (\$2020) (3)	CO ₂ Reduction (\$2020) ⁽³⁾	Safety Benefits (\$2020)	Pedestrian/ Bicycle Benefits (\$2020)	Initial Costs (\$2020)	Operation & Maintenance Cost (\$2020)	Undiscounted Net Benefits (\$2020)
ol	2022										
- 1	2023								\$ (2,775,617)		\$ (2,775,617
- 2	2024								\$ (13,744,381)		\$ (13,744,381
3	2025	284,910	\$7,547,831	51,435	\$129,512	\$25,598	\$54,501	\$246,998		(\$16,177)	
- 4	2026	328,360	\$8,698,921	71,997	\$183,159	\$36,471	\$56,237	\$252,214	\$ (2,006,744)	(\$16,662)	\$7,203,59
- 5	2027	371,811	\$9,850,012	92,559	\$238,230	\$47,709	\$58,028	\$257,540		(\$17,162)	\$10,434,35
- 6	2028	415,261	\$11,001,102	113,121	\$294,236	\$60,318	\$59,876	\$262,978		(\$17,677)	\$11,660,83
7	2029	458,712	\$12,152,192	133,683	\$350,252	\$72,470	\$61,782	\$268,531		\$482,644	\$13,387,87
8	2030	502,162	\$13,303,282	154,244	\$414,021	\$84,988	\$63,749	\$274,201		(\$18,754)	\$14,121,48
9	2031	545,613	\$14,454,372	174,806	\$484,135	\$97,871	\$65,778	\$279,992		(\$19,316)	\$15,362,83
10	2032	589,063	\$15,605,463	195,368	\$546,456	\$111,119	\$67,872	\$285,904		(\$19,896)	\$16,596,91
11	2033	632,514	\$16,756,553	215,930	\$608,840	\$124,733	\$70,032	\$291,941		(\$408,124)	\$17,443,97
12	2034	675,964	\$17,907,643	236,492	\$671,839	\$138,712	\$72,260	\$298,106		(\$21,107)	\$19,067,45
13	2035	719,415	\$19,058,733	257,054	\$732,842	\$153,057	\$74,560	\$304,400		(\$21,741)	\$20,301,85
14	2036	762,865	\$20,209,823	277,615	\$796,954	\$170,235	\$76,931	\$310,828		(\$22,393)	\$21,542,37
15	2037	806,316	\$21,360,914	298,177	\$861,200	\$185,493	\$79,378	\$317,392		(\$23,065)	\$22,781,31
16	2038	849,766	\$22,512,004	318,739	\$930,526	\$201,117	\$81,903	\$324,094		\$649,346	\$24,698,98
17	2039	893,217	\$23,663,094	339,301	\$990,911	\$217,106	\$84,508	\$330,937		(\$24,469)	\$25,262,08
18	2040	936,667	\$24,814,184	359,863	\$1,059,035	\$233,461	\$87,195	\$337,925		(\$25,203)	\$26,506,59
19	2041	980,118	\$25,965,274	380,425	\$1,126,475	\$250,182	\$89,967	\$345,061		(\$3,070,409)	\$24,706,55
20	2042	1,023,568	\$27,116,365	400,986	\$1,189,080	\$267,267	\$92,827	\$352,347		(\$26,738)	\$28,991,14
21	2043		\$28,267,455	421,548	\$1,262,277	\$288,465	\$95,777	\$359,788		(\$27,540)	\$30,246,22
22	2044	1,110,469	\$29,418,545	442,110	\$1,336,172	\$306,465	\$98,821	\$367,385		(\$28,367)	\$31,499,02
23	2045	1,153,919	\$30,569,635	462,672	\$1,411,149	\$324,829	\$101,961	\$375,143		(\$29,218)	\$32,753,50
To	otal	14.822.798	392.685.565	5.346.690	15.487.790	3.372.069	1.539.442	6.196.707	\$ (28.560.462)	(\$2,705,852)	\$ 388.015.25

Individual Items Discounted at 7%								
otal Value of Time Saved (\$2020)	Vehicle Fuel Savings (\$2020)	CO2 Reduction (\$2020) (Discounted at 3%)	Safety Benefits (\$2020)	Pedestrian/ Bicycle Benefits (\$2020)	Operation & Maintenance Cost (\$2020)	Total Benefits (\$2020)	Capital Costs (\$2020)	
							(\$2,594,034)	
\$6.161.279	\$105.720	\$23.426	\$44,489	\$201.624	(\$13.205)	\$6.523.332	(\$12,004,874)	
\$6,636,365	\$105,720	\$23,420	\$44,489	\$201,624	(\$13,205)	\$7,031,104	(\$8,190,505)	
\$7,022,922	\$139,731	\$32,404 \$41,154	\$42,903 \$41,373	\$192,413	(\$12,712)	\$7,031,104	(\$1,030,930)	
\$7,022,922	\$109,855	\$50,516	\$41,373	\$175.233	(\$12,236)	\$7,446,690		
\$7,330,499	\$190,062	\$58,925	\$39,898 \$38,475	\$175,233	\$300.566	\$8,351,087		
\$7,742.631	\$240,964	\$67.090	\$37,103		(\$10.915)	\$8,236,461		
\$7,742,031	\$263.338	\$75.010	\$35,779		(\$10,515)	\$8,378,137		
\$7,933.026	\$277.791	\$82.683	\$34,503	\$145.339	(\$10,307)	\$8,463,227		
\$7,960,918	\$289.255	\$90,110	\$33,272	\$138.699	(\$193.897)	\$8,318,357		
\$7,951,208	\$298.305	\$97.290	\$32,085	\$132,362	(\$9,372)	\$8,501,877		
\$7,908,697	\$304.104	\$104,224	\$30,940	\$126.315	(\$9.022)	\$8,465,258		
\$7,837,718	\$309,073	\$112,545	\$29.835	\$120,545	(\$8.684)	\$8,401,031		
\$7,742,178	\$312.138	\$119.061	\$28,770	\$115.037	(\$8,360)	\$8,308,826		
\$7.625.595	\$315,201	\$125.329	\$27.743	\$109.782	\$219.956	\$8,423,606		
\$7,491,130	\$313.697	\$131,353	\$26,753	\$104.766	(\$7,746)	\$8,059,952		
\$7.341.622	\$313.330	\$137,134	\$25,798	\$99.980	(\$7.457)	\$7,910.407		
\$7,179,615	\$311,480	\$142.675	\$24,877	\$95,412	(\$848.994)	\$6,905,065		
\$7.007.384	\$307.281	\$147,980	\$23,988	\$91.053	(\$6.910)	\$7,570,776		
\$6,826,960	\$304.856	\$155.064	\$23,131	\$86,893	(\$6.651)	\$7,390,254		
\$6,640,153	\$301,592	\$159,942	\$22,305	\$82,924	(\$6,403)	\$7,200,512		
\$6,448,569	\$297,678	\$164,588	\$21,508	\$79,135	(\$6,163)	\$7,005,315		
\$148.057.183	\$5,483,848	\$2.095.077	\$621.038	\$2,558,625	(\$667.399)	\$158.148.372	(\$24,320,349)	

| Benefits | \$158,148,372 | Costs | \$24,320,349 | IRR | 36%

Benefit values for 2025 were not used in the benefits calculation as the project is scheduled to be in construction through November 2025 and the traveling public would not receive full project benefits during this time period. Operations & Maintenance costs for 2025 were also not included in the calculated costs as the contractor will be responsible to maintain the readway during construction in 2025. Full Benefits and Maintenance & Operations cost begin in 2026 and conclude in 2026.

133 Number of days assumed for 24-hour values for fuel savings
52 Number of days assumed for 50% of 24-hour values for fuel savings
53 Nyallons of Vehicle Fuel Savings assumed with no inflation

	Executive Data Summary								
		West Reserve Dri	ve: Hutton Ranch Ro	I. to Whitefish Stage	Rd. Intersection				
Calendar Year	Total Benefits	Maintenance Costs	Total Net Benefits	Total Capital Costs	Discounted Total Net	Discounted Capital	Net Present Value		
	(\$2020 Value)	(\$2020 Value)	(\$2020 Value)	(\$2020 Value)	Benefits (7%)	Costs (7%)	Net i resent value		
2022					\$0		\$0		
2023			(\$2,775,617)	(\$2,775,617)		(\$2,594,034)	(\$2,594,034)		
2024			(\$13,744,381)	(\$13,744,381)	\$0	(\$12,004,874)	(\$12,004,874)		
2025	\$7,988,263	(\$16,177)	(\$10,033,721)	(\$10,033,721)	\$6,523,332	(\$8,190,505)	(\$8,190,505)		
2026	\$9,210,339	(\$16,662)	\$7,203,595	(\$2,006,744)	\$7,031,104	(\$1,530,935)	\$5,500,169		
2027	\$10,434,356	(\$17,162)	\$10,434,356		\$7,446,690		\$7,446,690		
2028	\$11,660,832	(\$17,677)	\$11,660,832		\$7,780,428		\$7,780,428		
2029	\$13,387,871	\$482,644	\$13,387,871		\$8,351,087		\$8,351,087		
2030	\$14,121,488	(\$18,754)	\$14,121,488		\$8,236,461		\$8,236,461		
2031	\$15,362,832	(\$19,316)	\$15,362,832		\$8,378,137		\$8,378,137		
2032	\$16,596,918	(\$19,896)	\$16,596,918		\$8,463,227		\$8,463,227		
2033	\$17,443,974	(\$408,124)	\$17,443,974		\$8,318,357		\$8,318,357		
2034	\$19,067,453	(\$21,107)	\$19,067,453		\$8,501,877		\$8,501,877		
2035	\$20,301,852	(\$21,741)	\$20,301,852		\$8,465,258		\$8,465,258		
2036	\$21,542,379	(\$22,393)	\$21,542,379		\$8,401,031		\$8,401,031		
2037	\$22,781,312	(\$23,065)	\$22,781,312		\$8,308,826		\$8,308,826		
2038	\$24,698,989	\$649,346	\$24,698,989		\$8,423,606		\$8,423,606		
2039	\$25,262,087	(\$24,469)	\$25,262,087		\$8,059,952		\$8,059,952		
2040	\$26,506,597	(\$25,203)	\$26,506,597		\$7,910,407		\$7,910,407		
2041	\$24,706,551	(\$3,070,409)	\$24,706,551		\$6,905,065		\$6,905,065		
2042	\$28,991,148	(\$26,738)	\$28,991,148		\$7,570,776		\$7,570,776		
2043	\$30,246,221	(\$27,540)	\$30,246,221		\$7,390,254		\$7,390,254		
2044	\$31,499,021	(\$28,367)	\$31,499,021		\$7,200,512		\$7,200,512		
2045	\$32,753,500	(\$29,218)	\$32,753,500		\$7,005,315		\$7,005,315		
Total	\$416,575,721	(\$2,705,852)	\$388,015,259	(\$28,560,462)	\$158,148,372	(\$24,320,349)	\$133,828,023		

2025 Benefits and Maintenance Costs are included - Used for calculations only.

	West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection								
Current Status/Baseline & Problem to be Addressed	Change to Baseline/ Alternatives	Population Affected by Impacts	RAISE Merit Criteria	Economic Benefits	Summary of Results	Page Reference in BCA			
			Fagnamia Compatitivanas	Travel Time Savings	\$148.0 Million	15			
The current 3-lane alignment of West Reserve Drive and Whitefish Stage Road experiences significant traffic	throughput speeds for vehicles, resulting in shorter trip times and lower fuel consumption.	Vehicle users directly benefit from the improved capacity the proposed project offers.	Economic Competitiveness	Reduced Fuel Consumption	\$5.5 Million	16			
congestion and delayed turning movements. The lack of adequate sidewalk and bicyclist infrastructure discourages			Environmental Sustainability	CO2 Emissions Reduction	\$2.1 Million	16			
pedestrian travel and does not provide connectivity for the commercial and residential areas in this section of the Kalispell Urban Area.	The intersection improvements reduce the risk of traffic crashes.	Vehicle users directly benefit from the safety improvements the proposed project offers.	Safety	Reduced Roadway Crashes	\$0.6 Million	17			
	The addition of sidewalk space and a multiuse path encourages pedestrian and bicyclist travel.	Non-motorized users benefit from the facilities the proposed project offers.	Improves Mobility and Community Connectivity	Pedestrian and Bicycle Benefits	\$2.6 Million	17			

Project Schedule - West Reserve Drive: Hutton Ranch Rd. to Whitefish Stage Rd. Intersection							
Event	Schedule						
Conduct Project Delivery Determination	January 2, 2023						
Recommendation Memo Approval by Commission	January 24, 2023						
Stipend Memo Approval by Commission	February 21, 2023						
Advertise RFQ	April 3, 2023						
SOQ Due Date	April 24, 2023						
Distribute RFP	May 11, 2023						
Pre-Proposal Meeting	May 18, 2023						
Technical Proposals Due Date	August 1, 2023						
Bid Price Proposals Due Date	August 21, 2023						
Final Selection Date	August 22, 2023						
Commission Award	September 12, 2023						
Notice to Proceed for DB Firm	September 27, 2023						
Preconstruction Phase Begins (Includes R/W and Utility Activities)	September 28, 2023						
Preconstruction Phase Completed	March 25, 2024						
Construction Phase Begins (Notice to Proceed)	March 26, 2024						
Construction Phase - Substantial Completion	November 21, 2025						
Construction Phase - Final Completion	July 17, 2026						

The proposed schedule listed above is an example of the schedule of work which will be contracted to be complete by July 2026. Under this example, the project would be substantially complete in November 2025 providing full benefits for all users. The Design-Build contract method is an example of a project delivery method which allows for expedited project delivery and for innovation of project scheduling and the incorporation of value-added materials and products.