

Appendix C
Heartland Expressway
20-Year Program Estimated Project Costs

**APPENDIX C:
Heartland Expressway 20-Year Program**

20-Year Plan Estimated Project Costs

Heartland Expressway Project Priority Groupings 20-Year Plan Estimated Project Costs (2015 to 2035)

Highway	Segment	Improvement	Type	Total Project Cost	Project Development, Engineering, & Const. Engineering (16% of Tot. Proj. Cost)	Utility Cost (3% of Tot. Proj. Cost)	ROW Cost (3% of Tot. Proj. Cost)	Construction Cost (78% of Tot. Proj. Cost)
Group 1 (2015 to 2020)								
US 385	Intersection with NE 20 (East)	Intersection Improvements	Safety	\$ 800,000.00	\$ 128,000.00	\$ 24,000.00	\$ 24,000.00	\$ 624,000.00
US 385	L62A to Alliance	4-Lane Roadway	Roadway	\$ 66,000,000.00	\$ 10,560,000.00	\$ 1,980,000.00	\$ 1,980,000.00	\$ 51,480,000.00
US 385	Alliance to Chadron	Super 2 Facility - Add Passing Lanes	Roadway	\$ 2,250,000.00	\$ 360,000.00	\$ 67,500.00	\$ 67,500.00	\$ 1,755,000.00
US 26	In Scottsbluff @ 5th Avenue	Pedestrian Overpass	Safety	\$ 1,000,000.00	\$ 160,000.00	\$ 30,000.00	\$ 30,000.00	\$ 780,000.00
US 385	Chadron to SD	4-Lane	Roadway	\$ 48,000,000.00	\$ 7,680,000.00	\$ 1,440,000.00	\$ 1,440,000.00	\$ 37,440,000.00
US 26	L79E Intersection (Minatare)	Intersection Improvements	Safety	\$ 150,000.00	\$ 24,000.00	\$ 4,500.00	\$ 4,500.00	\$ 117,000.00
NE 71	I-80	Extend Bypass to NE 71 to the south		\$ 18,000,000.00	\$ 2,880,000.00	\$ 540,000.00	\$ 540,000.00	\$ 14,040,000.00
NE 71	Colorado Border to I-80	Super 2 Facility (4-Lane Design Criteria)	Roadway	\$ 15,000,000.00	\$ 2,400,000.00	\$ 450,000.00	\$ 450,000.00	\$ 11,700,000.00
NE 71	Clean Harbors (South of Kimball)	Intersection Improvement	Safety	\$ 250,000.00	\$ 40,000.00	\$ 7,500.00	\$ 7,500.00	\$ 195,000.00
NE 71	I-80 (MP 22) Interchange	Rest Area/Visitor Center	Truck Parking	\$ 5,000,000.00	\$ 800,000.00	\$ 150,000.00	\$ 150,000.00	\$ 3,900,000.00
ITS Improvements				\$ 2,820,000.00	\$ 197,400.00	\$ -	\$ -	\$ 2,622,600.00
Group 1 Total Project Cost =				\$ 159,270,000.00				

Highway	Segment	Improvement	Type	Total Project Cost	Project Development, Engineering, & Const. Engineering (16% of Tot. Proj. Cost)	Utility Cost (3% of Tot. Proj. Cost)	ROW Cost (3% of Tot. Proj. Cost)	Construction Cost (78% of Tot. Proj. Cost)
Group 2 (2020 to 2025)								
L62A	US26 to US 385	4-Lane Roadway (4-Lanes New Pavement)	Roadway	\$ 40,000,000.00	\$ 6,400,000.00	\$ 1,200,000.00	\$ 1,200,000.00	\$ 31,200,000.00
US 385	Alliance to L7E (Hemingford)	4-Lane	Roadway	\$ 48,000,000.00	\$ 7,680,000.00	\$ 1,440,000.00	\$ 1,440,000.00	\$ 37,440,000.00
US 385	Alliance to L7E (Hemingford)	Bridge Widening of Existing Grade Separation (NE 2)	Roadway	\$ 3,000,000.00	\$ 480,000.00	\$ 90,000.00	\$ 90,000.00	\$ 2,340,000.00
US 26	Wyoming State Line to Morrill	4-Lane Roadway	Roadway	\$ 21,000,000.00	\$ 3,360,000.00	\$ 630,000.00	\$ 630,000.00	\$ 16,380,000.00
US 26	Mitchell	Safety and Traffic Operation Improvements		\$ 1,000,000.00	\$ 160,000.00	\$ 30,000.00	\$ 30,000.00	\$ 780,000.00
US 26	Morrill	Safety and Traffic Operation Improvements		\$ 20,000,000.00	\$ 3,200,000.00	\$ 600,000.00	\$ 600,000.00	\$ 15,600,000.00
ITS Improvements				\$ 850,000.00	\$ 59,500.00	\$ -	\$ -	\$ 790,500.00
Group 2 Total Project Cost =				\$ 133,850,000.00				

Heartland Expressway Project Priority Groupings 20-Year Plan Estimated Project Costs (2015 to 2035)

Highway	Segment	Improvement	Type	Total Project Cost	Project Development, Engineering, & Const. Engineering (16% of Tot. Proj. Cost)	Utility Cost (3% of Tot. Proj. Cost)	ROW Cost (3% of Tot. Proj. Cost)	Construction Cost (78% of Tot. Proj. Cost)
Group 3 (2025 to 2030)								
US 385	L7E (Hemingford) to Chadron St Park	4-Lane	Roadway	\$ 66,000,000.00	\$ 10,560,000.00	\$ 1,980,000.00	\$ 1,980,000.00	\$ 51,480,000.00
US 385	Chadron to S Edge of Chadron St Park	4-Lane	Roadway	\$ 42,000,000.00	\$ 6,720,000.00	\$ 1,260,000.00	\$ 1,260,000.00	\$ 32,760,000.00
US 26	Minatare to L62A intersection	4-Lane Roadway (4-Lane of New Pavement)	Roadway	\$ 45,000,000.00	\$ 7,200,000.00	\$ 1,350,000.00	\$ 1,350,000.00	\$ 35,100,000.00
US 26	Minatare	Safety and Traffic Operation Improvements		\$ 1,000,000.00	\$ 160,000.00	\$ 30,000.00	\$ 30,000.00	\$ 780,000.00
				Group 3 Total Project Cost =	\$ 154,000,000.00			

Highway	Segment	Improvement	Type	Total Project Cost	Project Development, Engineering, & Const. Engineering (16% of Tot. Proj. Cost)	Utility Cost (3% of Tot. Proj. Cost)	ROW Cost (3% of Tot. Proj. Cost)	Construction Cost (78% of Tot. Proj. Cost)
Group 4 (2030 to 2035)								
US 385	Chadron	Relief Routes		\$ 20,000,000.00	\$ 3,200,000.00	\$ 600,000.00	\$ 600,000.00	\$ 15,600,000.00
US 26	Intersection with NE 71	Interchange		\$ 5,000,000.00	\$ 800,000.00	\$ 150,000.00	\$ 150,000.00	\$ 3,900,000.00
US 385	Chadron	Rest Area/Visitor Center	Truck Parking	\$ 5,000,000.00	\$ 800,000.00	\$ 150,000.00	\$ 150,000.00	\$ 3,900,000.00
US 26	Mitchell Relief Route	Safety and Traffic Operation Improvements		\$ 20,000,000.00	\$ 3,200,000.00	\$ 600,000.00	\$ 600,000.00	\$ 15,600,000.00
NE 71	Colorado Border to I-80	4-Lane	Roadway	\$ 45,000,000.00	\$ 7,200,000.00	\$ 1,350,000.00	\$ 1,350,000.00	\$ 35,100,000.00
				Group 4 Total Project Cost =	\$ 95,000,000.00			

Total 20-Year Plan Estimated Project Costs (2015 to 2035) = \$ 542,120,000.00

**APPENDIX C:
Heartland Expressway 20-Year Program**

Estimated Costs for Maintenance and Operations

**Heartland Expressway
Project Priority Groupings
Program Maintenance and Operations Costs**

Assumptions:

Base Year =	2012	
Study End Year =	2037	(Study Project Completion Date)
Total Years =	25	
Existing Maintenance and Operations Cost (\$/Lane Mile/Year) =	\$4,684	
New Pavement Maintenance (Joint Sealing) (\$/Lane Mile/Year) =	\$1,560	(\$12,500 per lane mile every eight years)
Existing POP Maintenance (\$/Lane Mile/Year) =	\$11,042	

Highway	Segment	Improvement	Type	Completion Year	Distance (miles)	Existing No. Lanes	Number of Years	Existing Yearly Maintenance & Operations Cost (\$4,684/Lane Mile/Year)	Existing POP Maintenance (\$11,042/Lane Mile/Year)	No. New Lanes	Number of Years	Additional Lanes Yearly Maint/Ops Costs (\$4,684/Lane Mile/Year)	Number of Times	Joint Sealing New Pavement (\$12,500/Lane Mile/ 8 Years)	Total Project (Existing and New Pavement) Maintenance & Operations Costs	New Pavement Maintenance and Operations Costs
Group 1 (2015 to 2020)																
US 385	L62A to Alliance	4-Lane Roadway, 2 Existing Lanes, 2 New Lanes	Roadway	2019	22	2	25	\$ 5,152,400	\$ 12,146,200	2	18	\$ 3,709,728	2	\$ 1,100,000	\$ 22,108,328	\$ 4,809,728
US 385	Alliance to Chadron	Super 2 - Add Passing Lanes, 3 Loc's, 12 Lane-Miles Total	Roadway	2020	58	2	25	\$ 13,583,600	\$ 32,021,800		17	\$ 955,536		\$ -	\$ 46,560,936	\$ 955,536
US 385	Chadron to SD	4-Lane, 2 Existing Lanes, 2 New Lanes	Roadway	2022	16	2	25	\$ 3,747,200	\$ 8,833,600	2	15	\$ 2,248,320	2	\$ 800,000	\$ 15,629,120	\$ 3,048,320
NE 71	I-80	Extend Bypass to NE 71 to the south, 4 New Lanes	Roadway	2022	3	0	0	\$ -	\$ -	4	15	\$ 843,120	2	\$ 300,000	\$ 1,143,120	\$ 1,143,120
NE 71	Colorado Border to I-80	Super 2 - Build 2 New Lanes, (PCC)	Roadway	2021	15	2	9	\$ 1,264,680	\$ 2,981,340	2	16	\$ 2,248,320	2	\$ 750,000	\$ 7,244,340	\$ 2,998,320
NE 71	I-80 (MP 22) Interchange	Rest Area/Visitor Center, Joint EB-WB	Truck Parking	2022			0		\$ -		15	\$ 110,000			\$ 1,650,000	\$ 1,650,000
ITS Improvements												\$ 423,000		\$ 423,000	\$ 423,000	
								\$ 23,747,880	\$ 55,982,940			\$ 10,538,024	\$ 2,950,000	\$ 94,758,844	\$ 15,028,024	

**Heartland Expressway
Project Priority Groupings
Program Maintenance and Operations Costs**

Highway	Segment	Improvement	Type	Completion Year	Distance (miles)	Existing No. Lanes	Number of Years	Existing Yearly Maintenance & Operations Cost (\$4,684/Lane Mile/Year)	Existing POP Maintenance (\$11,042/Lane Mile/Year)	No. New Lanes	Number of Years	Additional Lanes Yearly Maint/Ops Costs (\$4,684/Lane Mile/Year)	Number of Times	Joint Sealing New Pavement (\$12,500/Lane Mile/ 8 Years)	Total Project (Existing and New Pavement) Maintenance & Operations Costs	New Pavement Maintenance and Operations Costs
Group 2 (2020 to 2025)																
L62A	US26 to US 385	4-Lane Roadway, (4-Lanes New PCC)	Roadway	2022	8	2	10	\$ 749,440	\$ 1,766,720	4	15	\$ 2,248,320	2	\$ 800,000	\$ 5,564,480	\$ 3,048,320
US 385	Alliance to L7E (Hemingford)	4-Lane, 2 Existing Lanes, 2 New Lanes	Roadway	2027	16	2	25	\$ 3,747,200	\$ 8,833,600	2	10	\$ 1,498,880	1	\$ 400,000	\$ 14,479,680	\$ 1,898,880
US 26	Wyoming State Line to Morrill	4-Lane, 2 Existing Lanes, 2 New Lanes	Roadway	2024	7	2	25	\$ 1,639,400	\$ 3,864,700	2	13	\$ 852,488	2	\$ 350,000	\$ 6,706,588	\$ 1,202,488
US 26	Mitchell	Safety and Traffic Operation Improvements		2026	1	4	25	\$ 468,400	\$ 1,104,200	0	11	\$ -		\$ -	\$ 1,572,600	\$ -
US 26	Morrill Relief Route	Safety & Traffic Op. Improv's, 4 New Lanes	Roadway	2027	4	0		\$ -	\$ -	4	10	\$ 749,440	1	\$ 200,000	\$ 949,440	\$ 949,440
ITS Improvements												\$ 127,500		\$ 127,500	\$ 127,500	
								\$ 6,604,440	\$ 15,569,220			\$ 5,476,628	\$ 1,750,000	\$ 29,400,288	\$ 7,226,628	

Highway	Segment	Improvement	Type	Completion Year	Distance (miles)	Existing No. Lanes	Number of Years	Existing Yearly Maintenance & Operations Cost (\$4,684/Lane Mile/Year)	Existing POP Maintenance (\$11,042/Lane Mile/Year)	No. New Lanes	Number of Years	Additional Lanes Yearly Maint/Ops Costs (\$4,684/Lane Mile/Year)	Number of Times	Joint Sealing New Pavement (\$12,500/Lane Mile/ 8 Years)	Total Project (Existing and New Pavement) Maintenance & Operations Costs	New Pavement Maintenance and Operations Costs
Group 3 (2025 to 2030)																
US 385	L7E (Hemingford) to Chadron St Pk.	4-Lane, 2 Existing Lanes, 2 New Lanes	Roadway	2032	22	2	25	\$ 5,152,400	\$ 12,146,200	2	5	\$ 1,030,480	1	\$ 550,000	\$ 18,879,080	\$ 1,580,480
US 26	Minatare to L62A intersection	4-Lane Roadway (4-Lanes New PCC)	Roadway	2027	9	2	15	\$ 1,264,680	\$ 2,981,340	4	10	\$ 1,686,240	1	\$ 450,000	\$ 6,382,260	\$ 2,136,240
								\$ 6,417,080	\$ 15,127,540			\$ 2,716,720	\$ 1,000,000	\$ 25,261,340	\$ 3,716,720	

**Heartland Expressway
Project Priority Groupings
Program Maintenance and Operations Costs**

Highway	Segment	Improvement	Type	Completion Year	Distance (miles)	Existing No. Lanes	Number of Years	Existing Yearly Maintenance & Operations Cost (\$4,684/Lane Mile/Year)	Existing POP Maintenance (\$11,042/Lane Mile/Year)	No. New Lanes	Number of Years	Additional Lanes Yearly Maint/Ops Costs (\$4,684/Lane Mile/Year)	Number of Times	Joint Sealing New Pavement (\$12,500/Lane Mile/ 8 Years)	Total Project (Existing and New Pavement) Maintenance & Operations Costs	New Pavement Maintenance and Operations Costs
Group 4 (2030 to 2035)																
US 385	Chadron Relief Route	Safety & Traffic Op. Improv's, 4 New Lanes		2033	4	0	0	\$ -	\$ -	4	4	\$ 299,776	0	\$ -	\$ 299,776	\$ 299,776
US 385	Chadron to S Edge of Chadron St Park	4-Lane, 2 Existing Lanes, 2 New Lanes	Roadway	2032	14	2	25	\$ 3,278,800	\$ 7,729,400	2	5	\$ 655,760	1	\$ 350,000	\$ 12,013,960	\$ 1,005,760
US 385	Chadron	Rest Area/Visitor Center	Truck Parking	2034			0	\$ -	\$ -		3	\$ 110,000			\$ 330,000	\$ 330,000
NE 71	Colorado Border to I-80	4-Lane, 2 Existing Lanes (2021) & 2 New Lanes, (PCC)	Roadway	2037	15	0	0	\$ -	\$ -	2	0	\$ -	0	\$ -	\$ -	\$ -
								\$ 3,278,800	\$ 7,729,400			\$ 1,065,536	\$ 350,000	\$ 12,643,736	\$ 1,635,536	

All Groups Existing Yearly Maintenance & Operations Cost	All Groups Existing POP Maintenance
\$ 40,048,200	\$ 94,409,100

All Groups Total Project (Existing and New Pavement) Maintenance and Operations Costs	All Groups New Pavement Maintenance and Operations Costs
\$ 162,064,208	\$ 27,606,908

**Heartland Expressway
Project Priority Groupings
Program Maintenance and Operations Costs**

Highway	Segment	Improvement	Type	Completion Year	Distance (miles)	Existing No. Lanes	Number of Years	Existing Yearly Maintenance & Operations Cost (\$4,684/Lane Mile/Year)	Existing POP Maintenance (\$11,042/Lane Mile/Year)	No. New Lanes	Number of Years	Additional Lanes Yearly Maint/Ops Costs (\$4,684/Lane Mile/Year)	Number of Times	Joint Sealing New Pavement (\$12,500/Lane Mile/ 8 Years)	Total Maintenance & Operation Costs
Existing 4-Lane Sections of Heartland Expressway Corridor															
US 26	Morrill to Minatare	Existing 4-Lanes (PCC)	Roadway		26	4	25	\$ 12,178,400	\$ 28,709,200			\$ -	1	\$ -	\$ 40,887,600
NE 71	Kimball to Scottsbluff	Existing 4-Lanes (PCC)	Roadway		47	4	25	\$ 22,014,800	\$ 51,897,400			\$ -	0	\$ -	\$ 73,912,200
								\$ 34,193,200	\$ 80,606,600						\$ 114,799,800

Existing 4-Lane Maintenance and Operations Costs
\$ 114,799,800

Summary Table

Existing Pavement Maintenance and Operations Costs =	\$ 249,257,100
New Pavement Maintenance and Operations Costs =	\$ 27,606,908
Total Project (Existing and New Pavement) Maintenance & Operations Costs =	\$ 276,864,008