

Table of Contents

Abbreviations and Acronyms.....	1
Executive Summary	3
ES.1 Corridor Issues	4
ES.2 Corridor Study Needs and Objectives	5
<i>Need Number 1: System Linkage and Function</i>	<i>5</i>
<i>Need Number 2: Transportation Demand and Operations.....</i>	<i>5</i>
<i>Need Number 3: Roadway Geometrics</i>	<i>5</i>
<i>Need Number 4: Safety.....</i>	<i>6</i>
<i>Need Number 5: Livability and Connectivity.....</i>	<i>6</i>
<i>Need Number 6: Truck Traffic.....</i>	<i>6</i>
<i>Other</i>	<i>6</i>
ES.3 Improvement Options	6
ES.4 Conclusion	7
Chapter 1 Introduction.....	8
1.1 Study Purpose	8
1.2 Corridor Study Process.....	8
Chapter 2 Existing Conditions of US 93.....	11
2.1 Existing Roadway Users and Traffic Volumes.....	11
Right-of-Way and Jurisdictions	12
2.2 Physical Characteristics.....	17
2.3 Design Standards.....	18
2.4 Roadway Geometrics	20
2.4.1 <i>Horizontal Alignment</i>	<i>20</i>
2.4.2 <i>Vertical Alignment</i>	<i>21</i>
2.4.3 <i>Roadside Safety (Clear Zone).....</i>	<i>22</i>
2.5 Roadway Surface Width.....	22
2.6 Geotechnical	23
2.7 Drainage.....	24
2.8 Hydraulic Structures.....	24
2.9 Structural Crossings	24
2.9.1 <i>Flathead River Bridge</i>	<i>25</i>
2.9.2 <i>Pablo Feeder Canal.....</i>	<i>25</i>
2.9.3 <i>Wildlife Underpass structures</i>	<i>25</i>
2.10 Crash Analysis.....	26
2.11 Railroad.....	26
2.12 Utilities	27
2.13 Access Points.....	27
2.14 Environmental Settings.....	27
2.14.1 <i>Physical Environment.....</i>	<i>28</i>

2.14.2	<i>Biological Resources</i>	30
2.14.3	<i>Social and Cultural Resources</i>	32
Chapter 3	Consultation, Coordination and Community Involvement.....	35
3.1	Informational Meetings	35
3.1.1	<i>Meeting Description and Context</i>	35
3.1.2	<i>Community Notification</i>	35
3.1.3	<i>Meeting Format</i>	36
3.1.4	<i>Issues and Comments by the Community</i>	36
3.2	Stakeholder Involvement	38
3.3	Resource Agency Workshop	39
3.4	Other Community Involvement Efforts.....	39
Chapter 4	Corridor Needs and Objectives.....	41
4.1	Needs and Objectives:	41
4.1.1	<i>Need Number 1: System Linkage and Function</i>	41
4.1.2	<i>Need Number 2: Transportation Demand and Operation</i>	41
4.1.3	<i>Need Number 3: Roadway Geometrics</i>	41
4.1.4	<i>Need Number 4: Safety</i>	42
4.1.5	<i>Need Number 5: Livability and Connectivity</i>	42
4.1.6	<i>Need Number 6: Truck Traffic</i>	42
4.1.7	<i>Other</i>	42
Chapter 5	Alignment Identification	43
5.1	Design Criteria.....	43
5.2	Data Gathering	43
5.3	Quantm Background	44
5.4	Quantm Alignment Trends	45
5.5	EIS Alignments.....	47
5.5.1	<i>EIS Alignments Modeled in Quantm</i>	47
5.5.2	<i>EIS Alignments Not Modeled in Quantm</i>	49
5.6	Overall Trends	52
Chapter 6	Alignment Selection	54
6.1	Issues and Deficiencies.....	54
6.1.1	<i>Vertical Alignment</i>	54
6.1.2	<i>Roadway Surface Width</i>	54
6.1.3	<i>Crash Trends</i>	55
6.2	Alignment Selection Development	55
6.3	Screening Process	55
6.4	Operational Analysis	79
6.4.1	<i>Shift in Thru-Truck Traffic</i>	79
6.4.2	<i>Intersection Level of Service</i>	80
6.4.3	<i>Travel Time</i>	92
6.4.4	<i>Cost Comparison</i>	93
6.4.5	<i>Recommendation for Feasible Alignments</i>	94
6.5	Alternate Route versus Existing US 93	95

6.5.1	Truck Traffic.....	95
6.5.2	Congestion.....	96
6.5.3	Livability.....	98
6.5.4	Safety.....	98
6.5.5	Economics.....	99
6.5.6	Wildlife/Natural Habitat.....	99
6.6	Recommended Improvements to Existing US 93.....	100
Chapter 7	Funding Mechanisms.....	101
7.1	Introduction.....	101
7.2	Federal Funding Sources.....	101
7.2.1	National Highway System (NHS).....	101
7.3	Discretionary Funds.....	102
Chapter 8	Corridor Study Conclusion.....	103
8.1	Next Steps.....	104
Chapter 9	References.....	105
Chapter 10	Study Team.....	106
10.1	Corridor Planning Team.....	106
10.2	CDM.....	107
10.3	Resource and Regulatory Agencies.....	107
Appendix A.....	Summary of Comments and Responses Received After Publication of the Draft Corridor Study.....	109
		111

List of Tables

Table 2.1	Average Annual Daily Traffic.....	11
Table 2.2	Design Standards for US 93.....	19
Table 2.3	Summary of US 93 Roadway Geometrics.....	20
Table 2.4	Maximum Grade.....	21
Table 2.5	Existing Roadway Surface Width.....	23
Table 2.6	Bridge Sufficiency Rating.....	25
Table 2.7	US 93 Crash Statistics (RP 55.0 – 65.0).....	26
Table 2.8	Access Points along US 93.....	27
Table 2.9	US Census Bureau Demographic Information.....	32
Table 2.10	City of Polson US Census Bureau 2000 Data.....	32
Table 5.1	Feature Identification and Prioritization.....	44
Table 5.2	Alignment Length and Planning Cost Comparison.....	52
Table 6.1	Initial Screening Criteria Rating Factors.....	56
Table 6.2	Access Control Rating Factor.....	57
Table 6.3	Rating for Principal Arterial Speed.....	57
Table 6.4	Future (2030) Rural Arterials’ Rating.....	58
Table 6.5	Future (2030) Urban Arterials’ Rating.....	59
Table 6.6	Right-of-Way Available for Non-motorized Users Rating.....	60

Table 6.7 Horizontal Curve Design Criteria Rating..... 60

Table 6.8 Road and Bridge Design Criteria Rating 61

Table 6.9 Access Density per Mile Rating62

Table 6.10 4(f) / 6(f) Resources Rating 63

Table 6.11 Wetlands Rating..... 64

Table 6.12 Residential Parcels Impacted..... 64

Table 6.13 Sensitive Areas Rating.....65

Table 6.14 Parks and Recreation Connectivity Rating.....65

Table 6.15 Rating by Length of Grade Greater than Four Percent 66

Table 6.16 Planning Level Cost Rating.....67

Table 6.17 Utilities Incorporation Rating67

Table 6.18 Rating for Community Preference 68

Table 6.19 Maintenance Cost Rating 68

Table 6.20 Weight Point System Assigned to Screening Criteria..... 69

Table 6.21 Summary of Corridor Need & Objectives Screening Criteria71

Table 6.22 Projected (2030) Amount of Thru-Truck Traffic in Polson..... 80

Table 6.23 Level of Service Criteria (Signalized Intersections)..... 81

Table 6.24 Existing (2010) Level of Service for Signalized Intersections82

Table 6.25 Level of Service Criteria (Unsignalized Intersections) 84

Table 6.26 Existing (2010) Level of Service for Unsignalized Intersections85

Table 6.27 Projected (2030) Urban Intersection LOS without Improvements or Alignment.....87

Table 6.28 Projected (2030) Rural Intersection LOS without Improvements or Alignment 88

Table 6.29 Projected (2030) Intersection LOS on Existing US 93..... 89

Table 6.30 Projected (2030) Intersection LOS with Inclusion of Southern Bridge Crossing Hybrid 90

Table 6.31 Projected (2030) Intersection LOS with Inclusion of Northern Bridge Crossing Hybrid..... 91

Table 6.32 Projected (2030) Intersection LOS with Inclusion of EIS Alignment 6.....92

Table 6.33 Future (2030) Intersection LOS Results92

Table 6.34 Travel Time Comparison.....93

Table 6.35 Cost Comparison..... 94

Table 6.36 Operational Analysis Results 94

List of Figures

Figure 1-1 Study Area Boundary 10

Figure 2-1 MDT Statewide Traffic Count Site Location Map12

Figure 2-2 Location and Layout of Polson Airport13

Figure 2-3 Land Ownership15

Figure 2-4 Posted Speed Limits.....17

Figure 2-5 Design Speeds along US 93.....21

Figure 5-1 First Run of Potential Alignments45

Figure 5-2 EIS Alignments Modeled in Quantm.....47

Figure 5-3 Potential EIS Alignments and Alignments Produced by Quantm.....51

Figure 5-4 Overall Trends.....53

Figure 6-1 Initial Hybrid Alignments Under Consideration.....77

Figure 6-2 Recommended Hybrid Alignments78

Figure 6-3 Existing (2010) Intersection Level of Service83

List of Appendices (appendices contained on accompanying CD)

Appendix A: Consultation, Coordination and Community Involvement

- Comments Received After Publication of the Draft Corridor Study
 - *Summary of Comments and Responses (also included in hard copy format)*
 - *Comments Received from June 24, 2011 through July 15, 2011*
- Comments Received Before Publication of the Draft Corridor Study
 - *Comments Received from June 10, 2010 through June 23, 2011*
- Informational Meeting No. 1 (September 9, 2010)
 - *Press Release Announcing Informational Meeting*
 - *Newspaper Advertisement*
 - *Sign-In Sheet*
 - *Welcome and Display Boards*
 - *Handouts*
 - *Presentation*
 - *Summary of Meeting Notes*
- Informational Meeting No. 2 (February 24, 2011)
 - *Press Release Announcing Informational Meeting*
 - *Newspaper Advertisement*
 - *Sign-In Sheet*
 - *Welcome and Display Boards*
 - *Presentation*
 - *Summary of Meeting Notes*
- Informational Meeting No. 3 (June 29, 2011)
 - *Press Release Announcing Informational Meeting*
 - *Newspaper Advertisement*
 - *Sign-In Sheet*
 - *Welcome and Display Boards*
 - *Presentation*
 - *Summary of Meeting Notes*
- Newsletter Issue 1 (August 2010)
- Newsletter Issue 2 (February 2011)
- Newsletter Issue 3 (June 2011)
- Resource Agency Meeting (September 30, 2010)
 - *Agency Meeting Invitation*
 - *Agency Meeting Sign-In Sheet*
 - *Meeting Notes*

Appendix B: Environmental Scan Report

Appendix C: Corridor Study Documentation

- Public Participation Plan
- Corridor Setting Document
- Existing Conditions of US 93
- Corridor Needs and Objectives
- Alignment Identification
- First Level Screening Criteria
- Intersection Level of Service Reports