US HIGHWAY 93
MISSOULA TO FLORENCE

APPENDIX B:
Corridor Concept Evaluation

CORRIDOR CONCEPTS

Four improvement concepts were identified for the US 93 corridor and are characterized according to a general design principle, with individual design features that can be adapted and applied to fit the context of a specific corridor segment. Generalized descriptions of the concepts are presented below. Illustrations of the concepts applied to each of the five corridor segments are provided on the following pages. These illustrations were used to assist the Corridor Concept Evaluation Process.

CONCEPTS ELIMINATED FROM CONSIDERATION

Through public and stakeholder involvement efforts, several other potential improvements, such as light rail or alternative routes, were noted. Though these concepts were explored and considered by the project team, they were ultimately eliminated from further consideration because the concepts were determined infeasible.

CONCEPT 1: SUBURBAN DESIGN

Includes varying combinations of the following design features:

- Redesign roadway with 45-55 mph design speed
- Utilize raised center medians with roadway lighting (minimal change to access)
- Incorporate curb, gutter, sidewalk, and/or landscaping, as appropriate
- Install roadway lighting
- Integrate additional traffic calming features as needed (ITS, speed feedback signs)


CONCEPT 2: MANAGED ACCESS DESIGN

Includes varying combinations of the following design features:

- Maintain existing design speeds
- Consolidate access points as much as possible and maintain full access at remaining minor approaches
- Provide full movements and intersection control at major intersections (signals, roundabouts)
- Utilize divided highway and raised median features as appropriate to limit full access movements
- No u-turn options except for emergency access and maintenance needs



CONCEPT 3: REDUCED CONFLICT DESIGN

Includes varying combinations of the following design features:

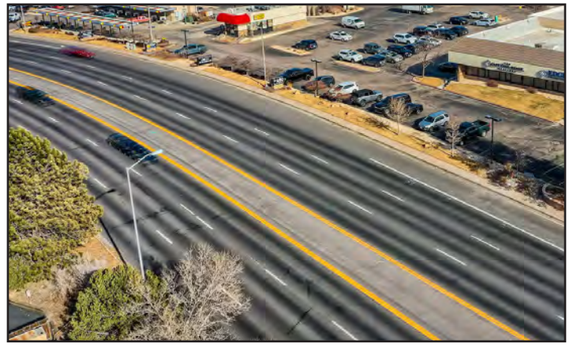
- Maintain existing design speeds
- Eliminate full-movement access except at controlled locations
- Use reduced conflict intersection designs (continuous T, roundabout, RCUT)
- Divide highway using raised medians, grassy medians, concrete barriers, cable rail, etc.
- Provide u-turn options at periodic locations



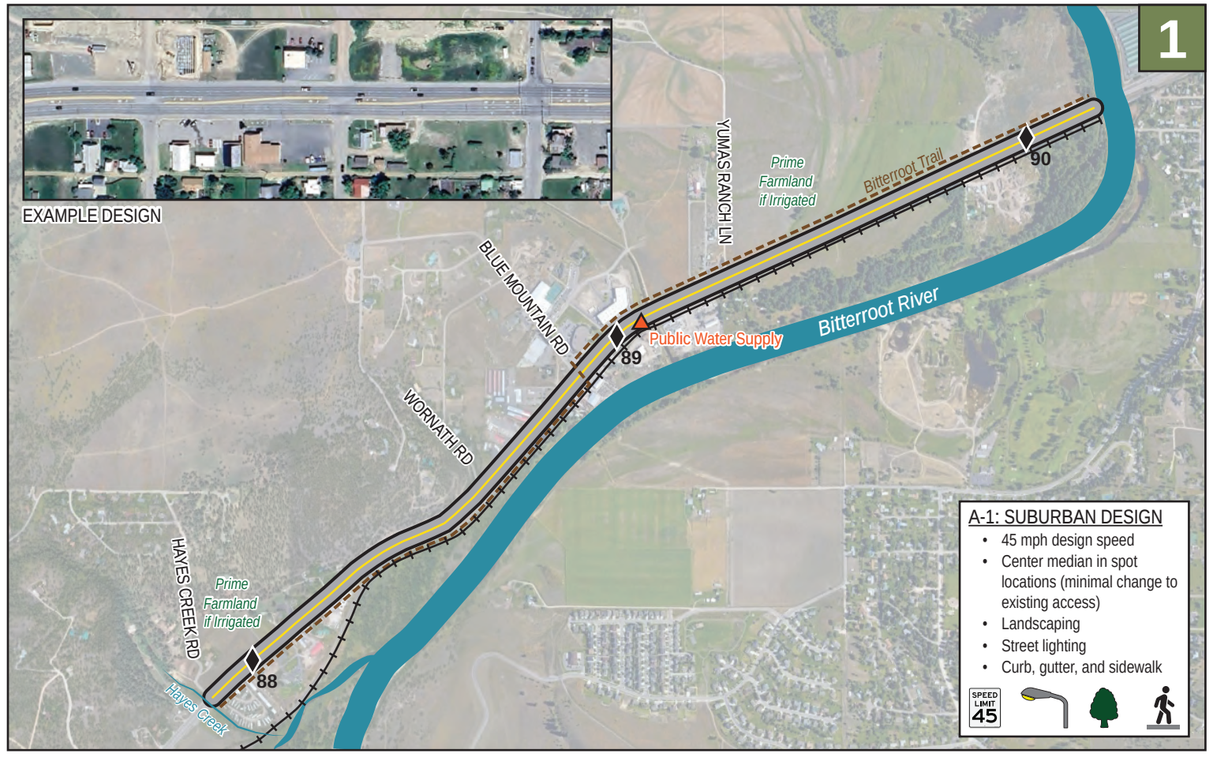

CONCEPT 4: INCREASED CAPACITY DESIGN

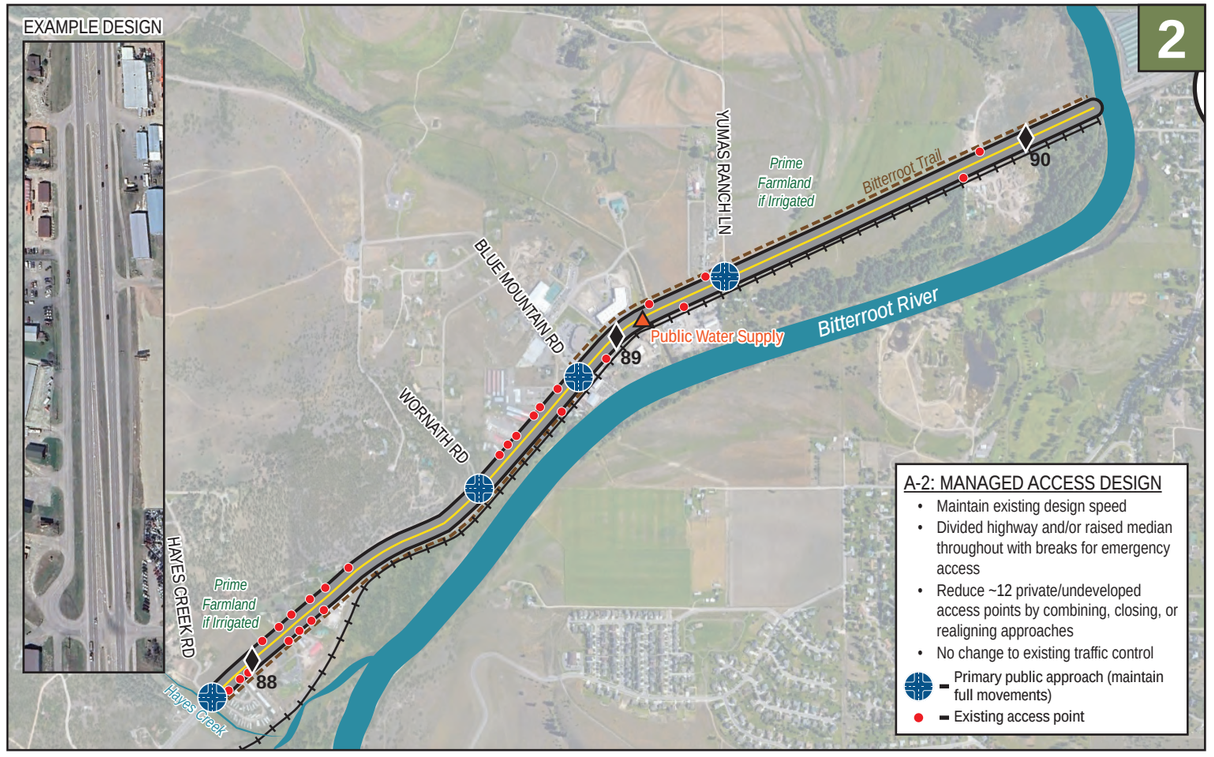
Includes varying combinations of the following design features:

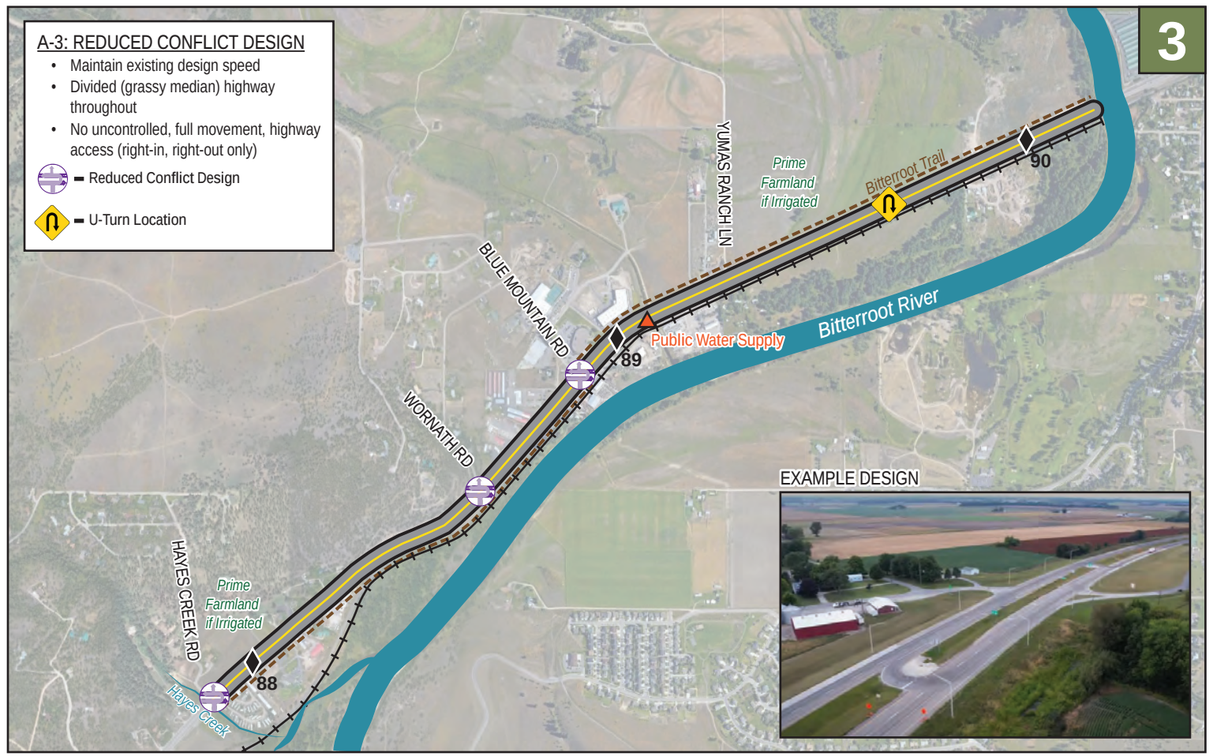
- Maintain existing design speeds
- Include three travel lanes in each direction
- Implement full access control
- Use reduced conflict intersection designs (continuous T, roundabout, RCUT)
- Prioritize operations and accommodations for future growth

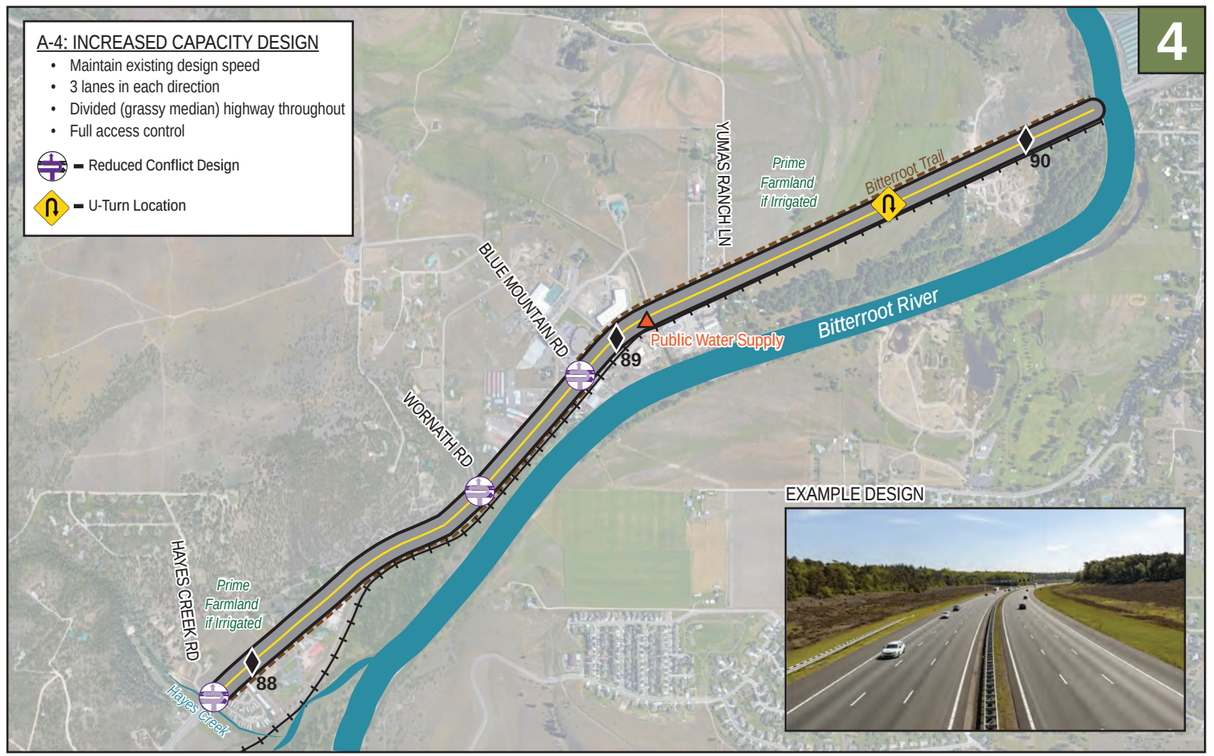



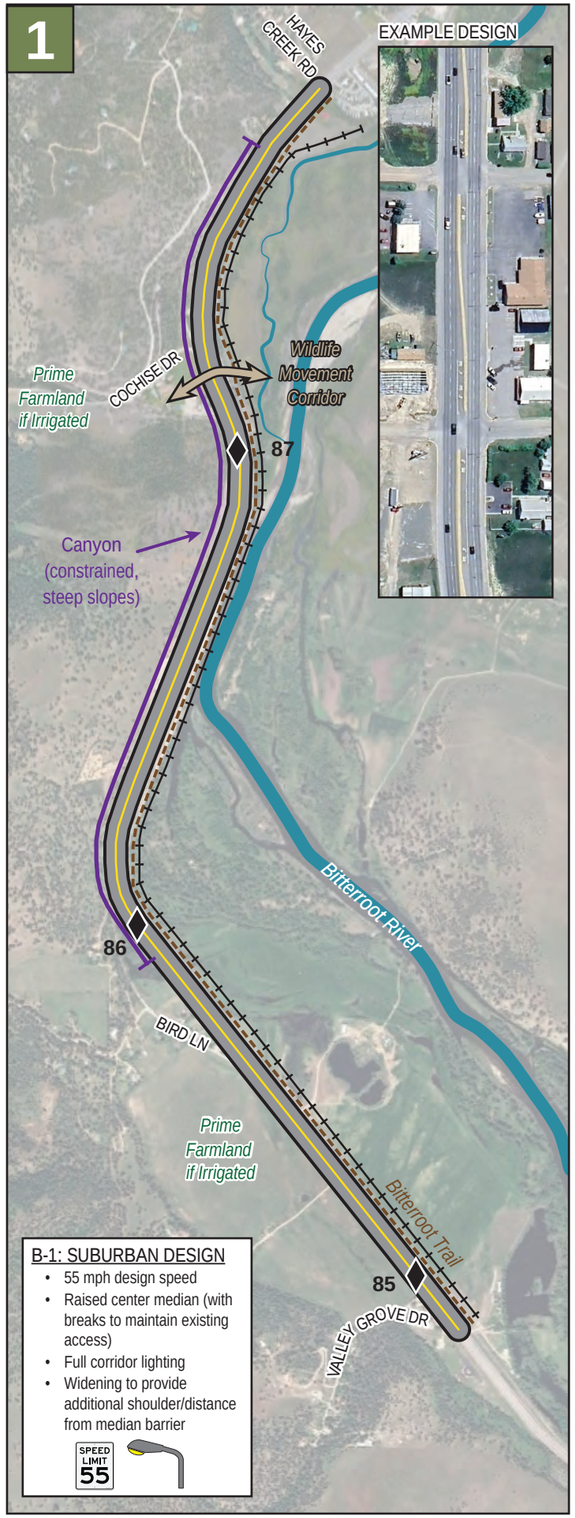
SEGMENT A: URBAN/RURAL TRANSITION (Buckhouse Bridge to Hayes Creek Rd)

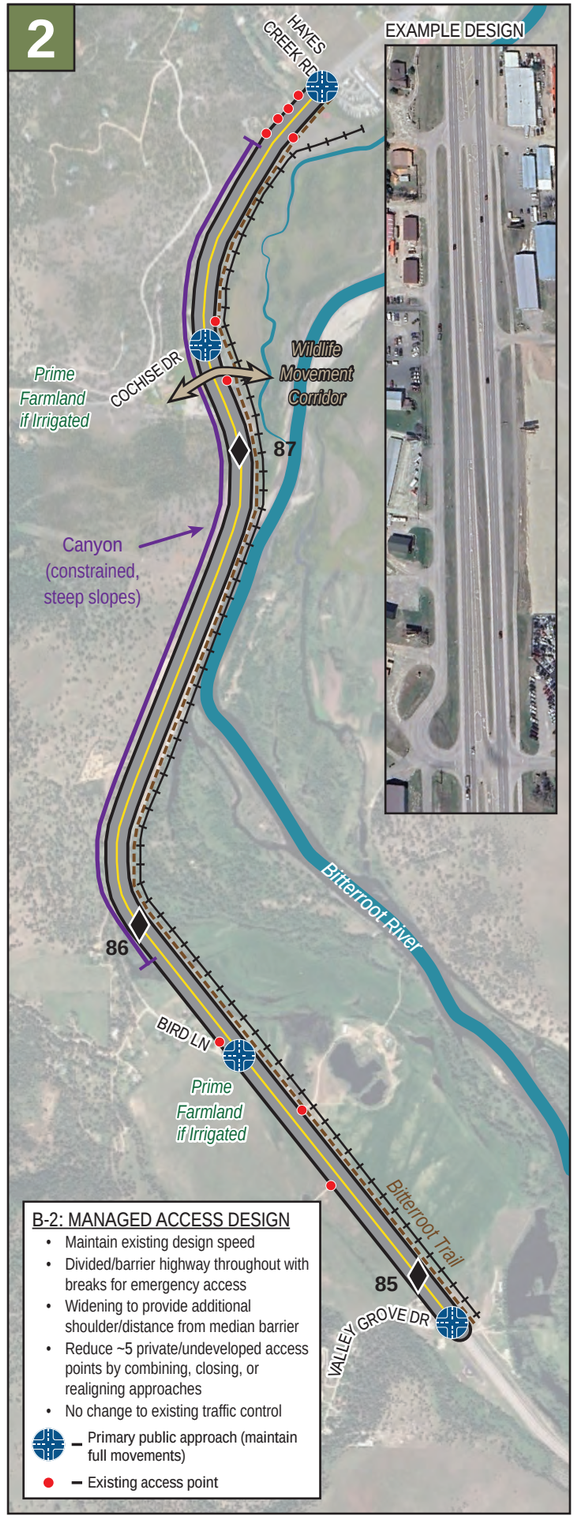


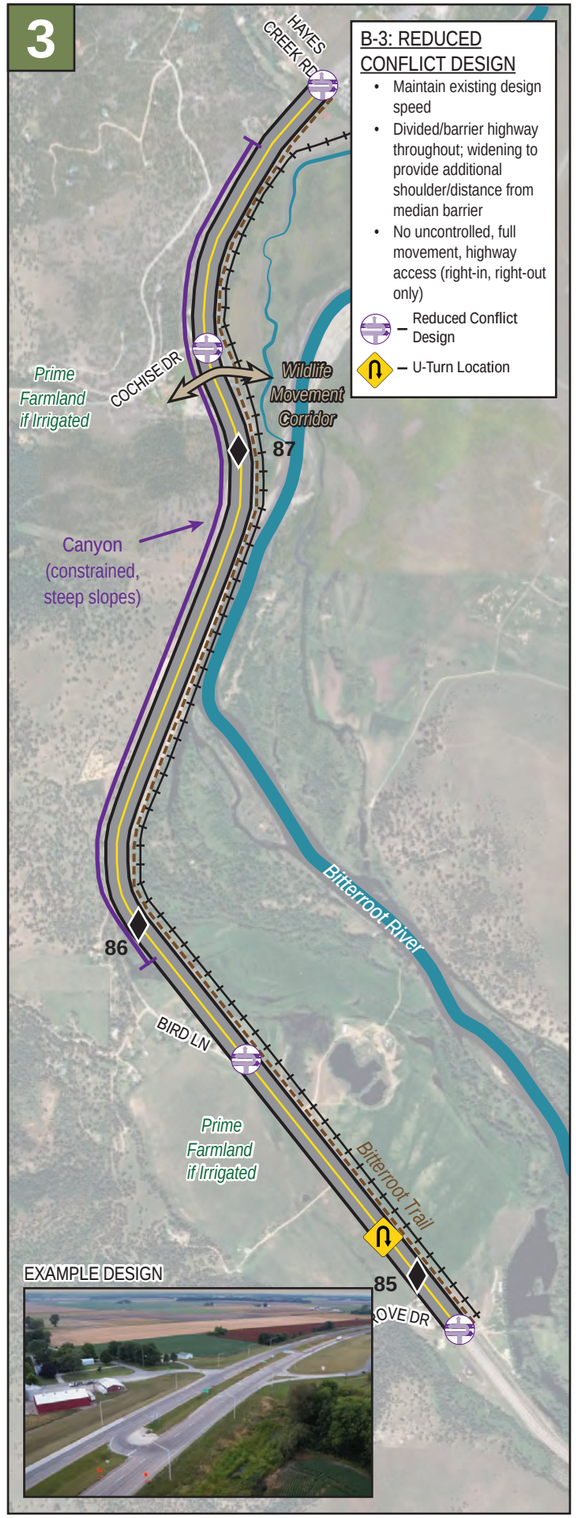


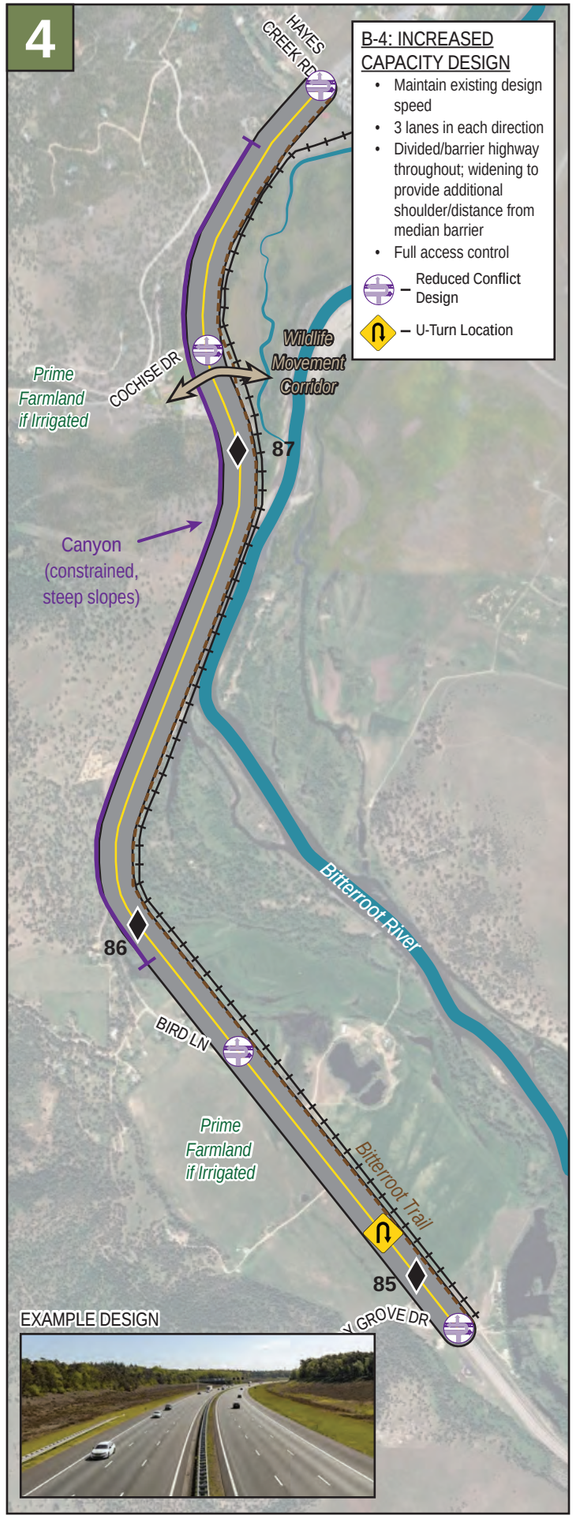




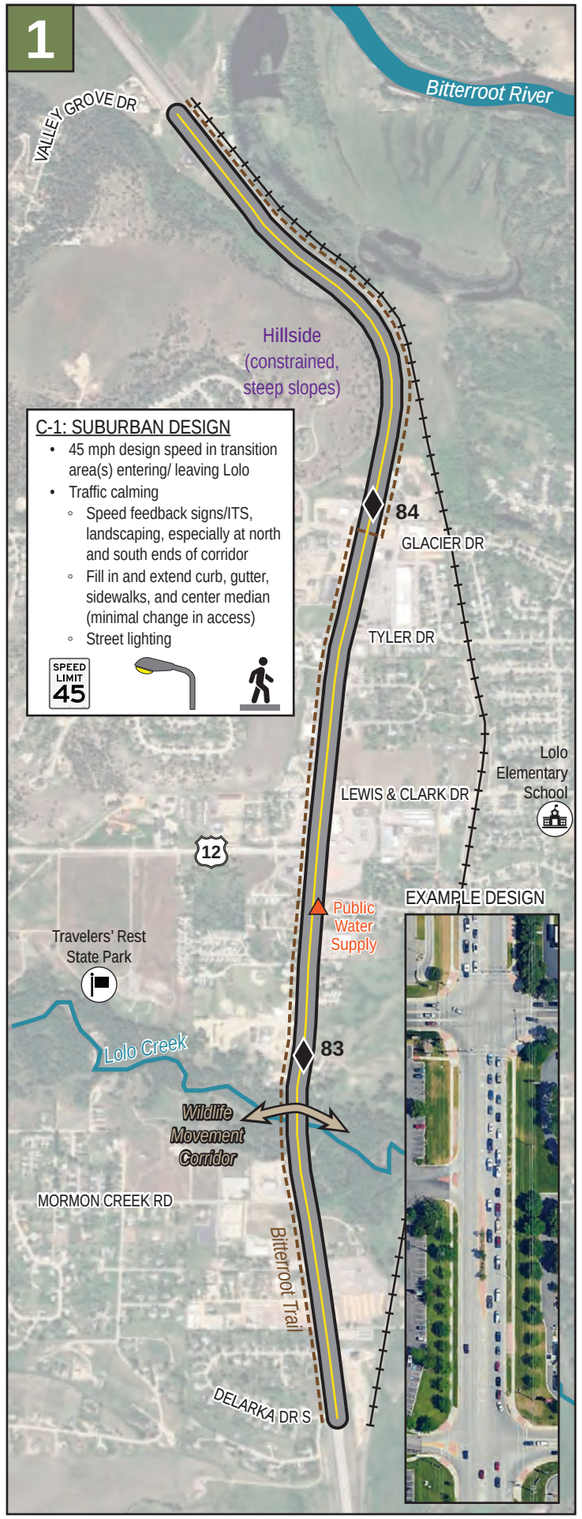


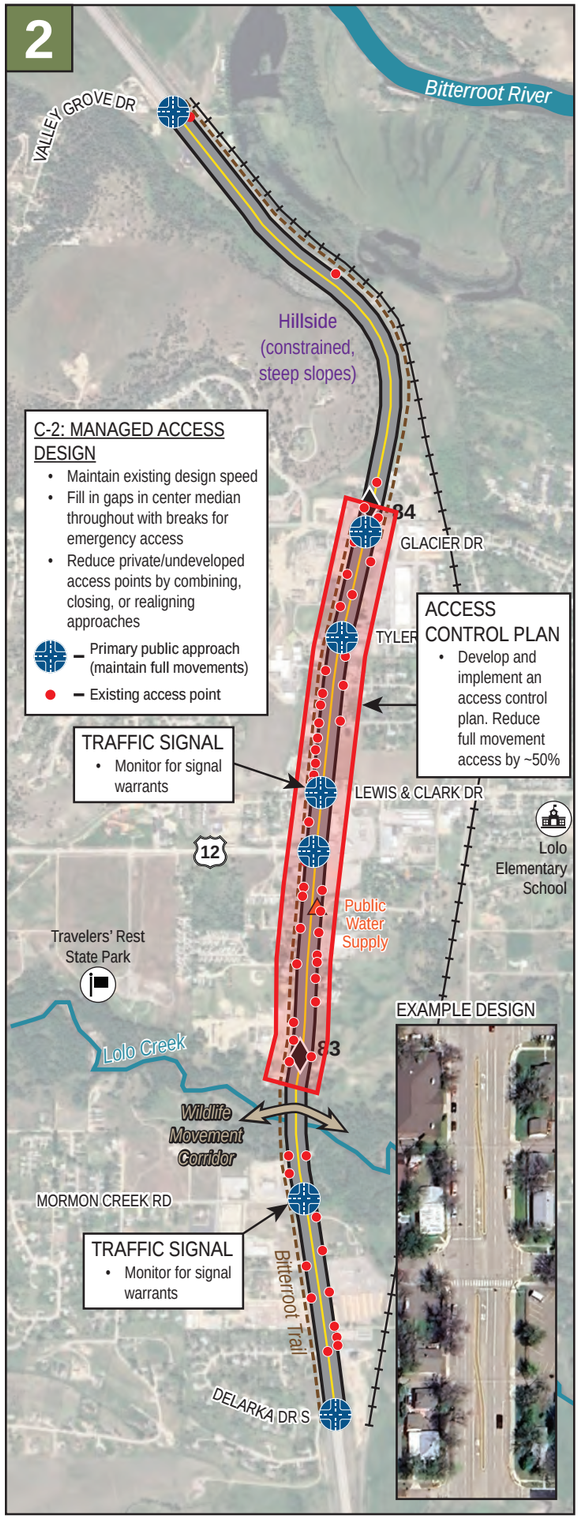


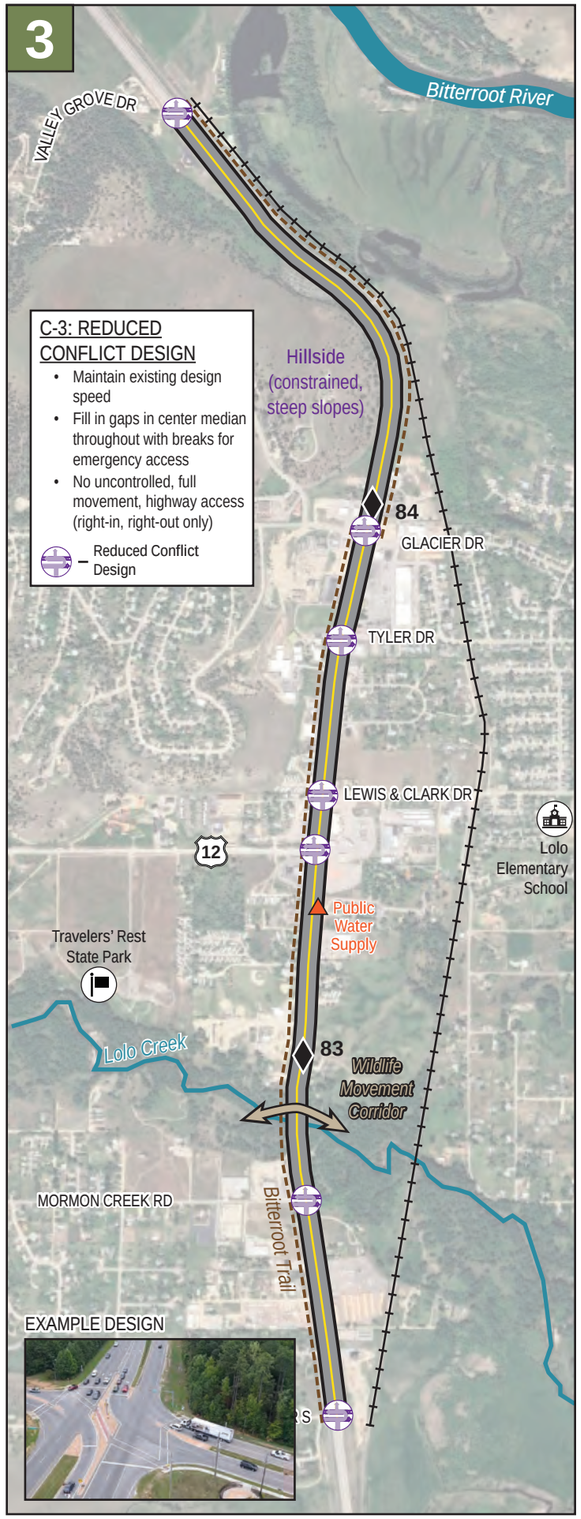


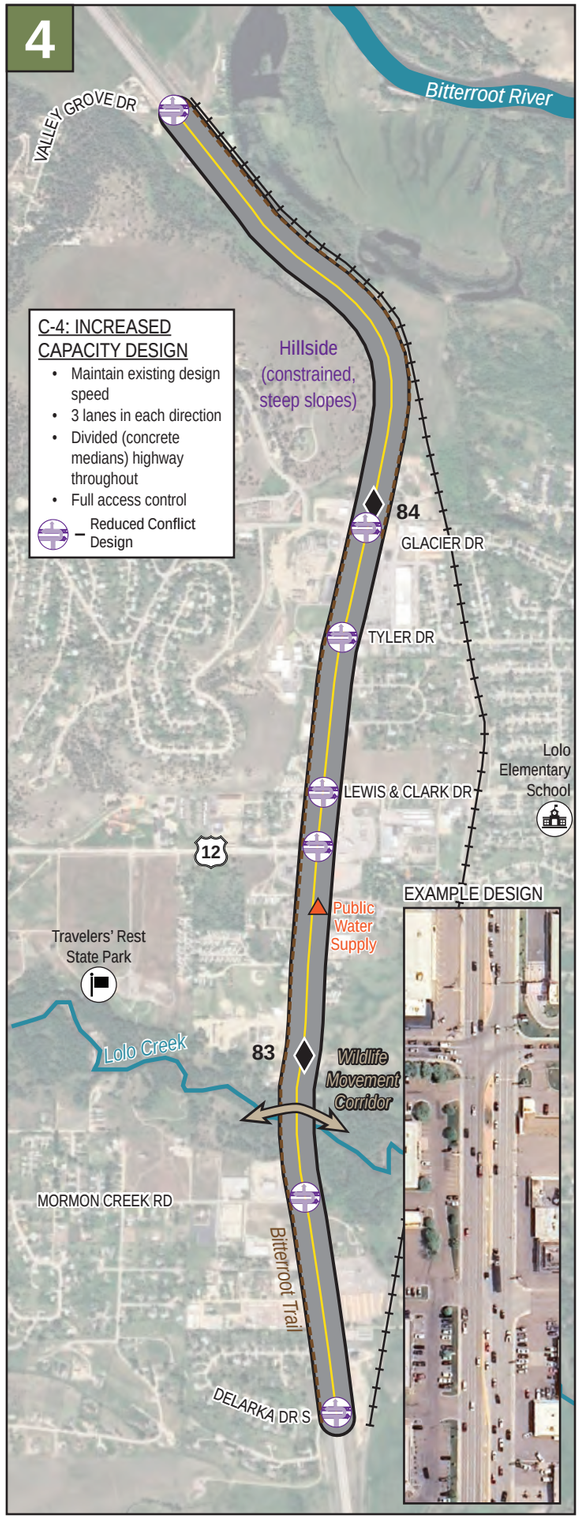


SEGMENT B: RURAL S CURVES (Hayes Creek Rd to Valley Grove Dr)



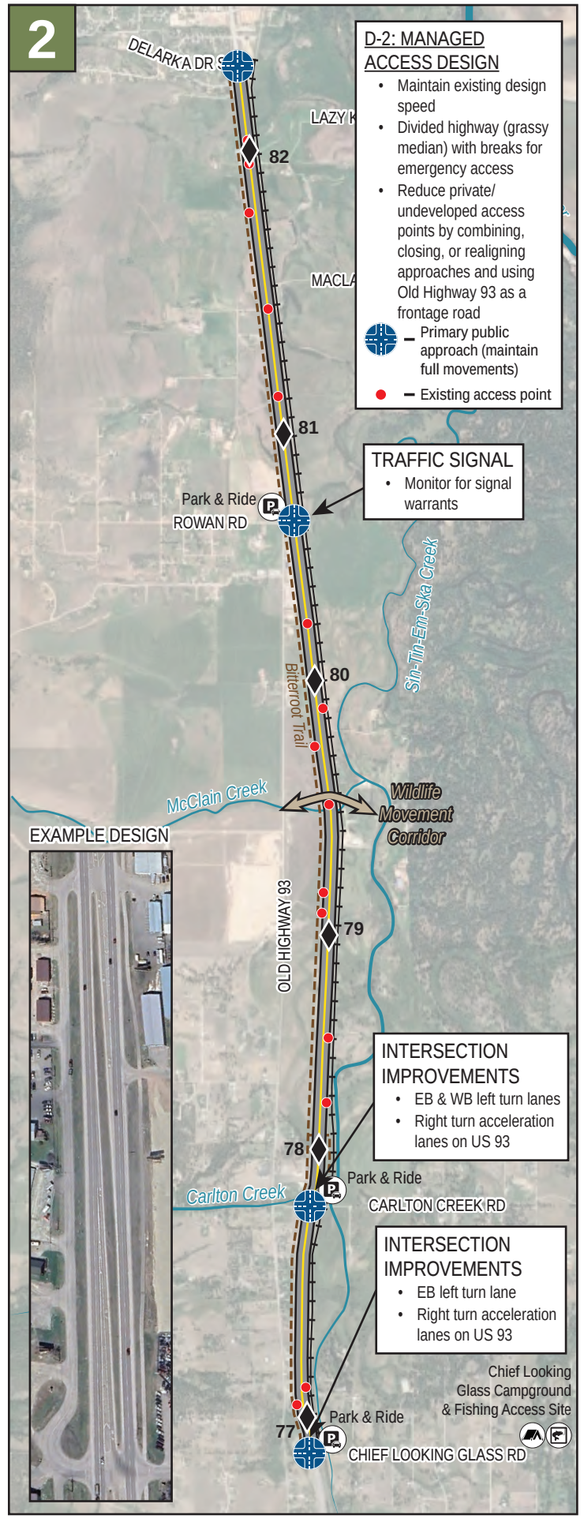


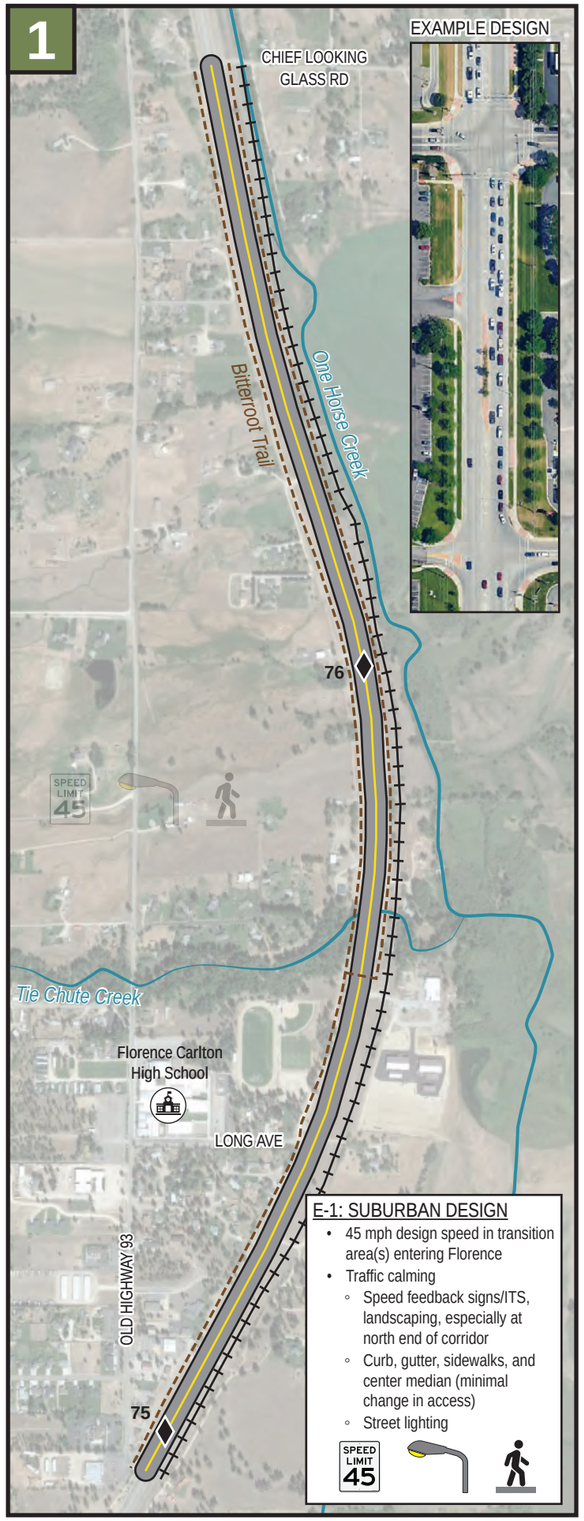


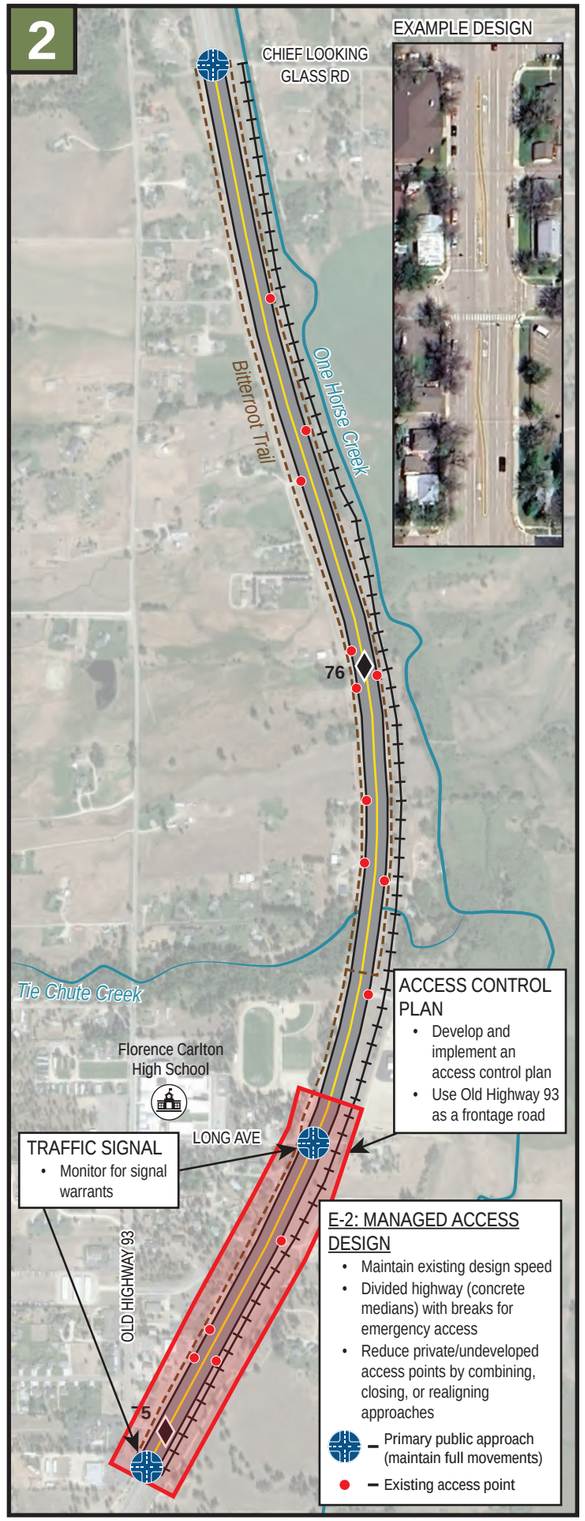


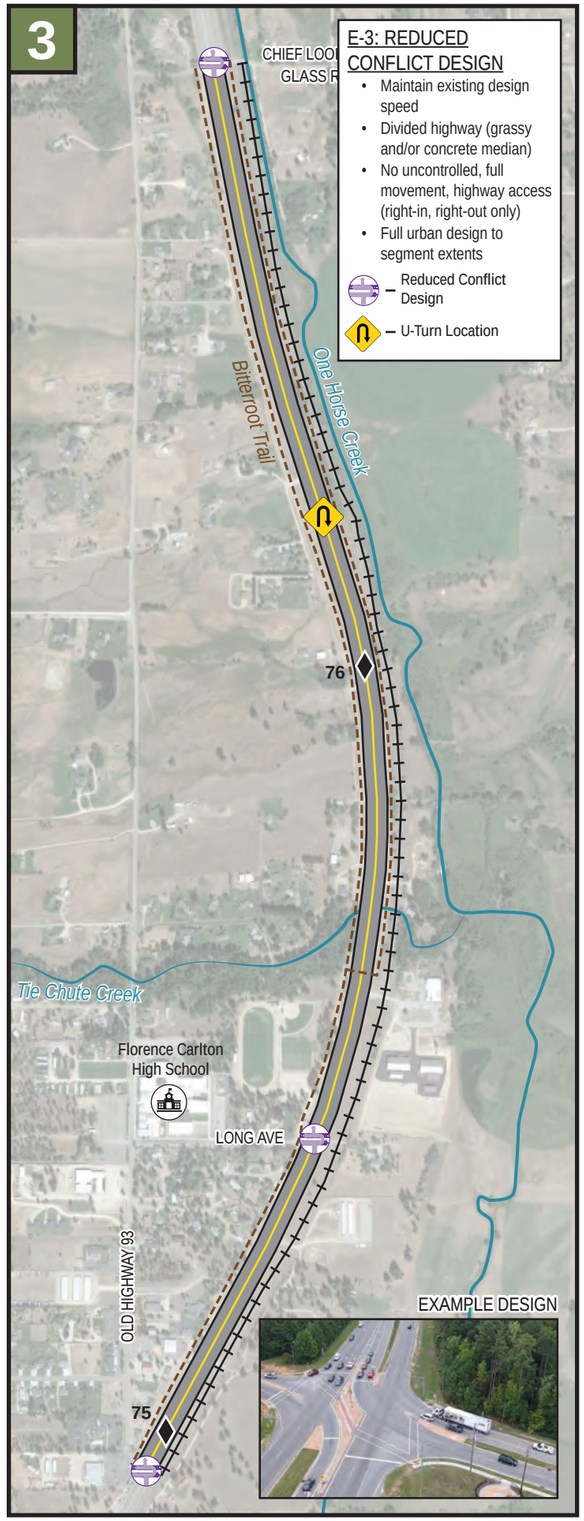
SEGMENT C: LOLO AREA (Valley Grove Dr to Delarka Dr S)

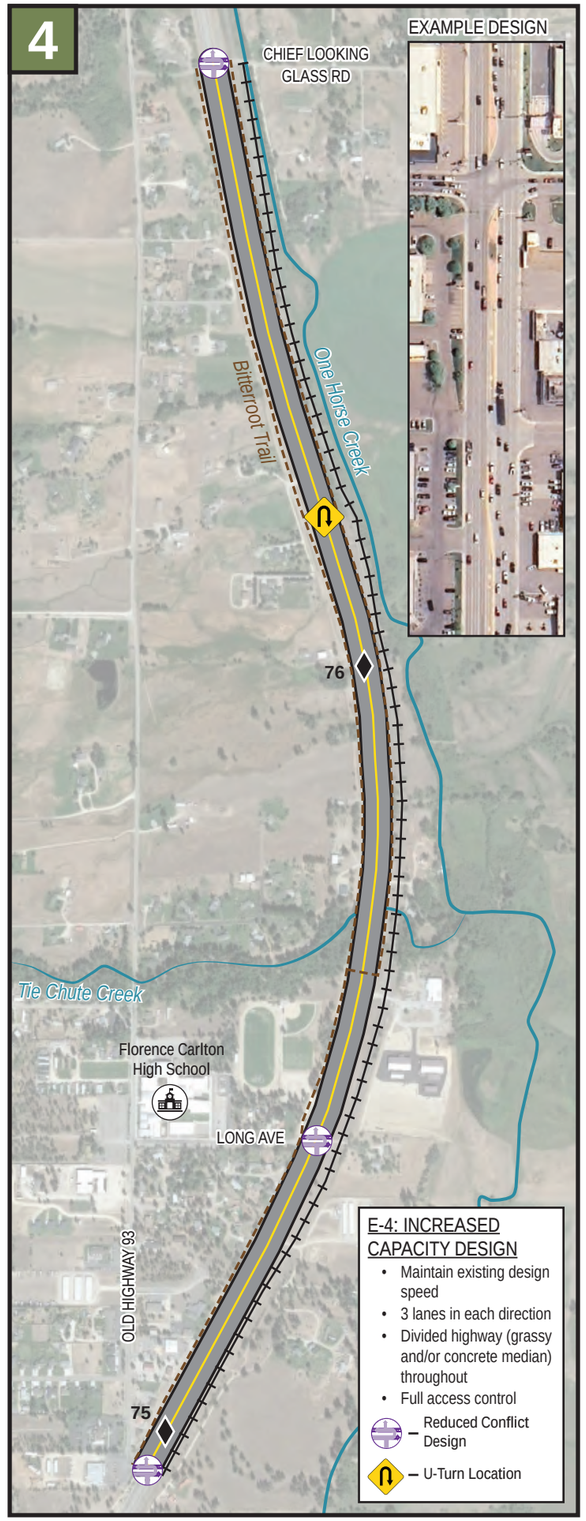
SEGMENT D: RURAL HIGHWAY (Delarka Dr S to Chief Looking Glass Rd)











SEGMENT E: FLORENCE AREA (Chief Looking Glass Rd to Old Highway 93)

CORRIDOR CONCEPT EVALUATION METHODOLOGY

Using the improvement concepts identified for each of the corridor segments, a comprehensive screening process was conducted. The screening involved a qualitative analysis of applicable corridor concepts for each of the five corridor segments to determine how well it would meet the goals and objectives of the *US 93-Missoula to Florence Corridor Study.* The primary goal of this study is to improve roadway safety by minimizing fatalities and serious injuries. As secondary goals, this study aims to improve traffic operations and mobility and identify improvements that are feasible to implement. In support of these goals, specific screening criteria were developed, as shown in the screening process outlined below. Each alternative was rated for each screening criteria according to a Very Good to Very Poor scale as shown in the table below. To be considered for further evaluation, a concept must PASS the primary goal by scoring an average FAIR rating and score highly under the secondary goals. Only the top two performing concepts for each segment were considered for further evaluation. The evaluation results are provided on page 8.

CORRIDOR CONCEPT EVALUATION PROCESS

PRIMARY GOAL

Minimize Fatalities and Serious Injuries →

- Reduce turning and crossing conflicts between all users
- Reduce mainline conflicts between vehicles
- Reduce conflicts with wild animals
- Reduce conflicts with fixed objects
- Encourage context appropriate speed

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Average rating greater than FAIR = **PASS** / Average rating less than FAIR = **FAIL**

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SECONDARY GOALS

Support Efficient Traffic Operations and Mobility →

- Minimize vehicle delay and travel times
- Allow for efficient corridor management
- Provide appropriate and reasonable access

Support Feasible Solutions →

- Minimize capital and maintenance costs
- Minimize impacts and constructability challenges

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RESULT

- Alternatives receiving **FAIL** rating under the primary goal will **NOT ADVANCE**
- The top two performing options will **ADVANCE**

CORRIDOR CONCEPT EVALUATION RATING DEFINITIONS

GOAL	VERY GOOD	GOOD	FAIR	POOR	VERY POOR
SAFETY	Greatest potential for reduction in conflicts and severe crashes	Potential for major reduction in conflicts and severe crashes	Potential for moderate reduction in conflicts and severe crashes	Potential for minimal reduction in conflicts and severe crashes	No anticipated reduction (or increase) in conflicts and severe crashes
OPERATIONS	Greatest improvement in traffic operations	Major improvement in traffic operations	Moderate improvement in traffic operations	Minimal improvement in traffic operations	No improvement (or deterioration) in traffic operations
IMPACTS	Least amount of impacts	Minimal impacts	Moderate impacts	Major impacts	Greatest amount of impacts

CORRIDOR CONCEPT EVALUATION RESULTS

ALTERNATIVE		PRIMARY GOAL					PRIMARY GOAL RESULT	SECONDARY GOAL					EVALUATION RESULT
		Minimize Fatalities & Serious Injuries						Support Efficient Traffic Operations & Mobility			Support Feasible Solutions		
		Reduce turning and crossing conflicts between all users	Reduce mainline conflicts between vehicles	Reduce conflicts with wild animals	Reduce conflicts with fixed objects	Encourage context appropriate speeds		Minimize vehicle delay and travel times	Allow for efficient corridor management	Provide appropriate and reasonable access	Minimize capital and maintenance costs	Minimize impacts and constructability challenges	
SEGMENT A: URBAN / RURAL TRANSITION													
A-1	**Suburban**	Fair	Very Good	Good	Fair	Very Good	PASS	Good	Good	Good	Fair	Very Good	ADVANCED
A-2	**Managed Access**	Good	Very Good	Good	Good	Fair	PASS	Good	Good	Very Good	Good	Very Good	ADVANCED
A-3	**Reduced Conflict**	Very Good	Good	Good	Good	Fair	PASS	Fair	Good	Fair	Good	Good	NOT ADVANCED
A-4	**Increased Capacity**	Fair	Good	Poor	Fair	Poor	FAIL	Very Good	Very Good	Fair	Very Poor	Very Poor	FAILED PRIMARY
SEGMENT B: RURAL "S" CURVES													
B-1	**Suburban**	Fair	Fair	Fair	Poor	Fair	FAIL	Fair	Fair	Good	Good	Fair	FAILED PRIMARY
B-2	**Managed Access**	Good	Good	Good	Fair	Good	PASS	Good	Fair	Very Good	Good	Fair	ADVANCED
B-3	**Reduced Conflict**	Very Good	Fair	Good	Fair	Good	PASS	Fair	Good	Good	Fair	Fair	ADVANCED
B-4	**Increased Capacity**	Poor	Fair	Very Poor	Poor	Very Poor	FAIL	Very Good	Very Good	Good	Very Poor	Very Poor	FAILED PRIMARY
SEGMENT C: LOLO AREA													
C-1	**Suburban**	Fair	Good	Good	Fair	Very Good	PASS	Good	Good	Good	Fair	Good	ADVANCED
C-2	**Managed Access**	Good	Good	Good	Fair	Fair	PASS	Good	Good	Very Good	Good	Good	ADVANCED
C-3	**Reduced Conflict**	Fair	Fair	Good	Fair	Fair	PASS	Poor	Fair	Poor	Poor	Poor	NOT ADVANCED
C-4	**Increased Capacity**	Poor	Fair	Fair	Poor	Poor	FAIL	Good	Very Good	Poor	Very Poor	Very Poor	FAILED PRIMARY
SEGMENT D: RURAL HIGHWAY													
D-1	**Suburban**	Fair	Good	Fair	Poor	Poor	FAIL	Poor	Fair	Fair	Good	Very Good	FAILED PRIMARY
D-2	**Managed Access**	Good	Very Good	Good	Very Good	Very Good	PASS	Good	Good	Very Good	Fair	Good	ADVANCED
D-3	**Reduced Conflict**	Very Good	Very Good	Good	Very Good	Very Good	PASS	Good	Good	Good	Fair	Good	ADVANCED
D-4	**Increased Capacity**	Fair	Good	Poor	Good	Good	PASS	Very Good	Very Good	Good	Poor	Poor	NOT ADVANCED
SEGMENT E: FLORENCE AREA													
E-1	**Suburban**	Fair	Good	Good	Fair	Very Good	PASS	Good	Good	Good	Fair	Very Good	ADVANCED
E-2	**Managed Access**	Good	Good	Good	Good	Fair	PASS	Good	Good	Very Good	Good	Good	ADVANCED
E-3	**Reduced Conflict**	Good	Fair	Good	Good	Fair	PASS	Fair	Fair	Poor	Fair	Fair	NOT ADVANCED
E-4	**Increased Capacity**	Poor	Fair	Fair	Fair	Poor	FAIL	Good	Very Good	Poor	Very Poor	Very Poor	FAILED PRIMARY