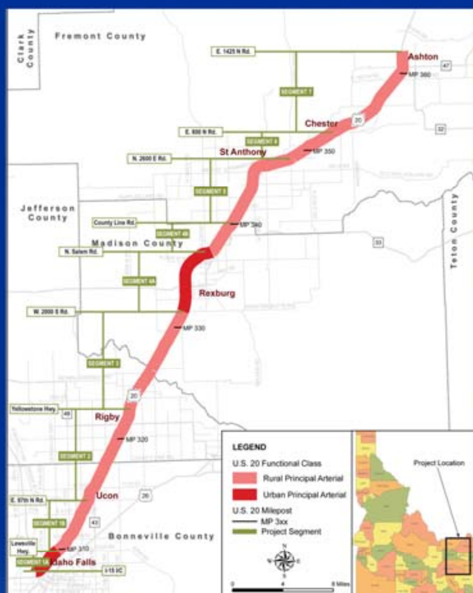
TECHNICAL MEMORANDUM

U.S. 20
CORRIDOR PLAN REFRESH



PREPARED FOR:

Idaho Transportation Dept.
District 6

PREPARED BY:

DKS Associates
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1 Overview of the Corridor Refresh

1.1 ITD Corridor Planning History

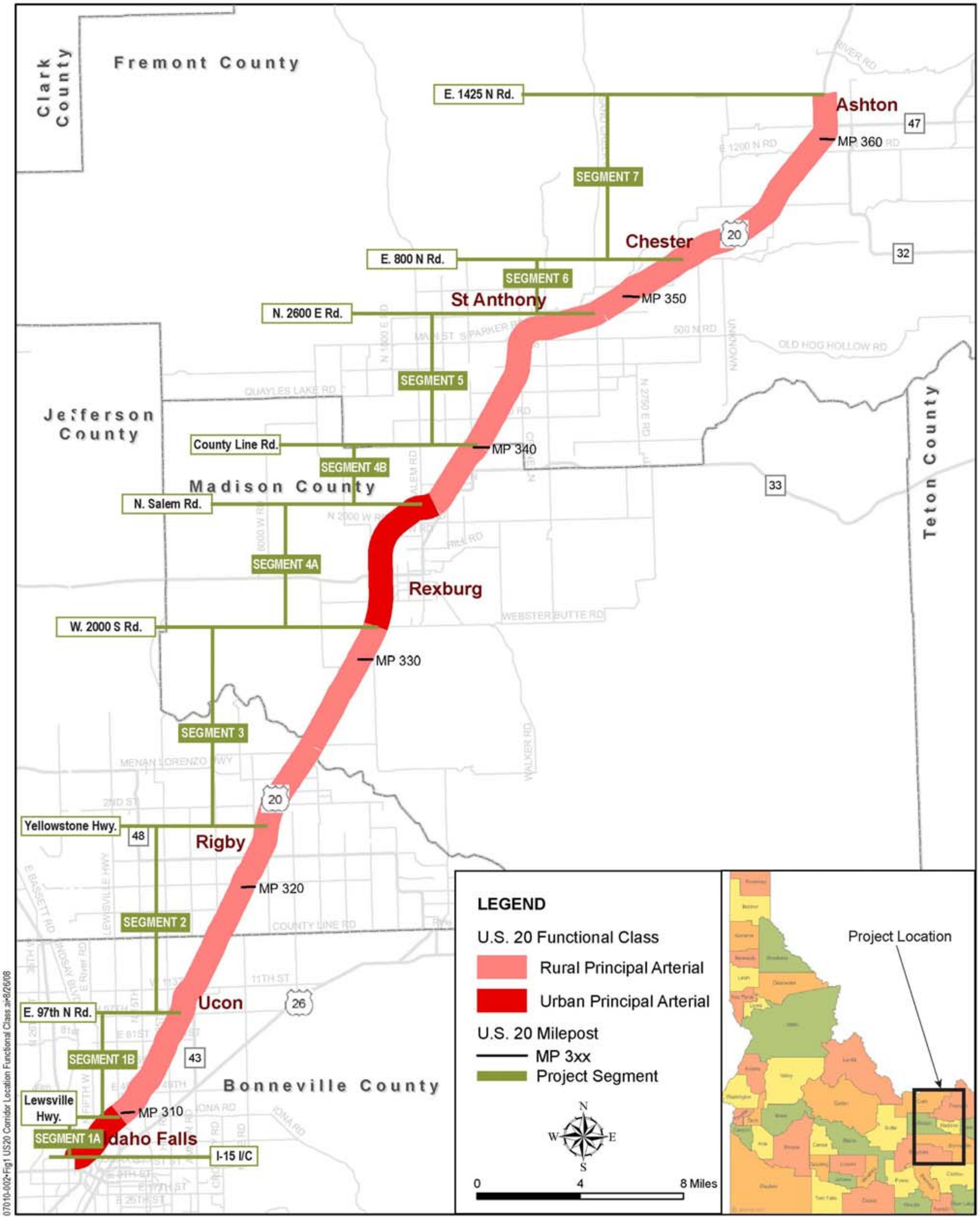
In the late 1990s the Idaho Transportation Department (ITD) began a process of corridor planning to identify existing and potential future needs and deficiencies on the state highways in Idaho. The process was initiated to explore economical alternatives to highway construction and to identify which transportation projects should proceed to the programming and development stage. Corridor planning was initiated to comprehensively address future transportation needs and to recommend a package of improvements and management strategies for the transportation system within a corridor. The specific objectives for the Corridor Plans are identified in guidelines for their preparation as the as following: [1]

- Promote the safe and efficient movement of people, goods, and services.
- Initiate an intergovernmental cooperative planning process to promote community and state based transportation decisions.
- Provide opportunities for public, local government, and agency participation early on and throughout the process, and promote active participation in potential corridor solutions, including the development of context sensitive solutions.
- Meet objectives by comprehensively addressing transportation issue and evaluating a full range of multimodal solutions for increased mobility.
- Save money by identifying long-range right-of-way needs by anticipating potential problems resulting from growth before solutions become too expensive.
- Fill the gap between the statewide modal plans for highways, public transportation, rail, aeronautics, bicycle/pedestrian, and the project selection process.
- Furnish a link between land-use planning and transportation planning.
- Determine the extent of the social, economic, and environmental issues within the corridor and analyze potential alternatives at an appropriate and economical level of detail.
- Facilitate resolution of major issues (i.e., public opinion, cost, environmental constraints) before specific project programming and development begin.
- Protect transportation investments by exploring alternate means to accommodate transportation needs, with and without capital-intensive improvements.
- Provide an opportunity to direct future development, and minimize environmental, social, and economic impacts.

A Corridor Plan was prepared for the US 20 Corridor in 2000[2] that covered the area indicated in **Figure 1**. The purpose of this Corridor Plan "Refresh" is to update the analysis of existing and future conditions and to determine whether there is a need for an updating of the recommendations for the corridor. The emphasis in the Corridor Plan Refresh is on updating the analysis of existing and future traffic flow characteristics and how they affect concerns such as safety, congestion, and the quality of the experience traveling in the corridor.

[1] ***Idaho Corridor Planning Handbook,*** prepared by the Idaho Transportation Department, Division of Transportation Planning, in association with CH2M Hill and Olson Planning Consulting, Boise, Idaho, Updated December 2006.
[2] ***US 20 Corridor Study - Idaho Falls to Ashton Hill Bridge***, prepared for the Idaho Transportation Department by JRH Transportation Engineering, March 2000.

Figure 1 – Location and Functional Class of the US 20 Corridor



An overall appraisal of the "health" of the corridor now and for a twenty-year forecast is made by combining numerical scores for each of these factors. This analysis of corridor heath is used to reassess exiting and future needs in the corridor. Based on the reassessment of needs, the improvements recommended in the 2000 Corridor Plan are also reassessed to determine whether they adequately address the new assessment of corridor needs.

1.2 2000 Corridor Plan for US 20

The 2000 Corridor Plan for US 20 included an analysis of the existing and future conditions in the corridor that consisted of a review of roadway geometrics, accident rates and level of service, all of which were compared to standards or policy guidelines for the appropriate level of each of the characteristics developed by ITD or by national professional organizations. The geometric characteristic included number of lanes, lane widths, vertical and horizontal alignment, shoulder width, and roadway signing, lighting and striping. The 2000 Corridor Plan also identified the facilities and services for modes other than the private passenger car including public transit, plane, bicycle and pedestrian. Modes for freight movement were also studied and described including truck, railroad and air. A land use review was conducted to identify existing and potential future land uses in the corridor. An environmental scan was conducted to identify potentially sensitive land uses and habitats. The planning effort also included a public outreach and involvement effort to identify the concerns, needs and desired improvements for the corridor.

1.3 Conclusions and Recommendations from the 2000 Corridor Plan

The 2000 Corridor Plan for US 20 approved in 2000 identified safety as the single most important issue in the corridor. It indicated that the corridor had a higher-than-average accident rate because of a number of factors. Most of the corridor between Idaho Falls and Chester, where US 20 is four lanes and divided, has the look and feel of an interstate and the average speed ran well above the posted speed limit of 55 miles per hour. But much of the four-lane portion of the corridor is not fully constructed to interstate standards. The Corridor Plan raised concern about the twenty-six at-grade intersections and their uses. Growth along the corridors was resulting in an increase in the number of turning movements at these intersections and increases in the conflicts. The most significant recommendations of the study were that ten interchanges be built to replace at-grade intersections and eleven local roads be closed and cul-de-sacs constructed.

Safety was also raised as a concern for the two-lane section between Chester and the Ashton Hill Bridge. The primary concern was for queues developing behind slow-moving vehicles such as recreational vehicles and farm equipment and accidents caused when drivers attempted to pass at inappropriate times. The primary recommendation for this segment was to add two-miles of passing lanes in each direction and left-turn storage bays at roadway intersections.

To address the needs and concerns on US 20 the 2000 Corridor Plan made the following recommendations:

1. **Eliminate grade-separated intersections on the four-lane, divided portion of the corridor**
    a. Consolidate roadways into fewer points of access
    b. Eliminate turning movements other than right turns at at-grade intersections as an interim measure

c. Replace the at-grade intersections that are to remain as access points with grade-separated interchanges over time
d. Build a new bridge over the Snake River to incorporate the Lyman Road connection into a new interchange
e. Develop parallel roads or frontage roads to carry local traffic to the roads with interchanges

2. **Access management that would prevent any additional direct access to US 20**
3. **Add two-miles of passing lanes on the two-lane undivided segment**
4. **Provide night-time lighting of at-grade intersections**
5. **Signage on the four-lane segments should meet interstate standards**
6. **Provide adequate shoulder widths to meet AASHTO guidelines**
7. **Maintain pavement quality**
8. **Reconfigure rumble strips on the shoulders to provide a better opportunity for bicycling**

Since the 2000 Corridor Plan was prepared, there have been nine projects completed on the corridor. They are summarized in **Table 1.** The projects include full or partial interchanges at five locations.

Table 1 – Recently Completed Roadway Improvements

Project Location	Improvements
Twin Groves to Chester	Northbound Pavement Rehabilitation / Reconstruction, Shoulder Improvement, and Roadway Realignment
Twin Groves to Chester Intersections	Left-Turn Bay Installation and Shoulder Widening in the Northbound Lanes
Sugar City Half Interchange	Partial Interchange Construction to replace the existing at-grade crossing
State Highway 33 Interchange	Full Interchange Construction to replace the existing at-grade crossing
St. Leon Road Interchange	Interchange Construction. As part of this project, all at-grade crossings from the Lewisville Interchange to the Ucon Interchange were eliminated
Hitt Road Interchange	Interchange Construction. As part of this project, all at-grade crossings from the Lewisville Interchange to the Ucon Interchange were eliminated
Bonneville/Jefferson County Line Road Interchange	Full Interchange Construction from Partial Interchange; as part of the project, access to Grant and Coltman roads from U.S. 20 were closed
Holbrook Road	Road Closure

Sources: District 6 Needs Report; Idaho Transportation Department News Release Archive.

2 Vision for the Corridor

2.1 Existing Characteristics and Functions of the State Route in the Corridor

As was indicated in **Figure 1**, the Idaho State Highway Plan classifies US 20 as a rural principal arterial for all but two sections: a 2.4 mile section in Idaho Falls at the southwest end of the corridor and a six mile section near Rexburg. The primary purpose of rural principal arterials is to "serve corridor movements having trip length and travel density characteristics indicative of substantial statewide or interstate travel."[3] The primary purpose of urban principal arterials is to "serve the major centers of activity of a metropolitan area, the highest traffic volume corridors, and the longest trip desires; and should carry a high proportion of the total urban area travel on a minimum of mileage. The system should be integrated, both internally and between major rural connections." The speed limit throughout the corridor is 55 miles per hour. The terrain is flat from Idaho Falls to Ashton and is rolling hills northeast of Ashton.

Much of the information available on roadway characteristics for Idaho state highways is available for small sections. In the database for the US 20 corridor, there are 42 sections that range in length from 0.13 miles to 5.94 miles. The 2000 Corridor Plan identified seven major groupings of sections along the corridor. For this update, two of the groupings (segments) have been divided in two subgroups producing a total of nine segments. The segment numbers from the 2000 Corridor Plan have been maintained with the subgroups identified as A and B. The following provides a brief description of each segment:

- **Segment 1A: Idaho Falls** (Milepost 307.45 to 309.88) A fairly developed urban four-lane commercial segment on the northeast fringe of Idaho Falls. US 20 is constructed to freeway standards and has no at-grade intersections.

- **Segment 1B: Idaho Falls to Ucon** (Milepost 309.88 to 314.51) A developing four-lane commercial corridor presently classified as rural between Idaho Falls and Ucon. US 20 is also constructed to freeway standards in this segment with no at-grade intersections.

- **Segment 2: Ucon to Rigby** (Milepost 314.51 to 322.28) A rural four-lane segment that includes Ucon and Rigby that is transitioning from rural and small town to more urban land use along US 20. US 20 is also constructed to freeway standards in this segment with no at-grade intersections.

- **Segment 3 Rigby to Rexburg** (Milepost 322.28 to 331.43) A rural four-lane segment with mostly rural land use except at the fringe of Rexburg. US 20 is a four lane divided highway with eight at-grade crossings in the segment.

- **Segment 4A: Rexburg** (Milepost 331.43 to 336.85) Urban four-lane segment that is highly developed on the western edge of Rexburg. US 20 is constructed to freeway standards in this segment with no at-grade intersections.

[3] ***FHWA Federal Functional Classification Guidelines,*** 1988, http://www.fhwa.dot.gov/planning/fcsec2_1.htm.

- **Segment 4B: Sugar City** (Milepost 339.85 to 340.22) Rural four-lane segment between the Rexburg and Sugar City with some commercial development. US 20 is also constructed to freeway standards in this segment with only one at-grade intersection at the northern limit of the segment.

- **Segment 5: St. Anthony** (Milepost 340.22 to 347.85) Rural four-lane segment that includes a segment through St. Anthony. US 20 is a four-lane divided highway with three at-grade crossings in the segment.

- **Segment 6: St. Anthony to Chester** (Milepost 347.85 to 352.74) Rural four-lane segment that is the final segment of the four-lane section of US 20 and is the most rural of the four-lane segments. There are three at-grade intersections in the segment.

- **Segment 7: Chester to the Ashton Hill Bridge** (Milepost 352.74 to 361.82) Rural two-lane section with rolling terrain and ten at-grade intersections.

The corridor spans a range of land-use characteristics from urban areas near Idaho Falls, Rigby, Rexburg and St. Anthony to rural areas between the towns and close to the north end of the corridor. U.S. 20 provides the primary connection for commuters and other residents along the Idaho Falls-Rigby-Rexburg segment, and also provides access for the population in eastern Idaho and Utah to the recreational areas near Island Park, other recreational areas in Fremont County, and the general area of Yellowstone National Park. Other users of the corridor include farmers east and west of the corridor and truckers moving goods to the northern portion of the corridor, to Montana and to Canada.

While most of the land along the US 20 corridor is currently in agricultural use, rapid growth in population and employment in the portion of the corridor from Rexburg south (Segments 1A – 4A) is resulting in increasing urbanization along the immediate right of way. Between 2000 and 2006 the population in the towns along the corridor – Ucon, Rigby, Rexburg, Sugar City, St. Anthony and Ashton – grew by 100,000 or roughly 37%. The highest growth occurred in Rexburg (54%). At the south end of the corridor, the cities of Idaho Falls, Ammon and Iona grew by 8000 residents or an increase of about 13%. Ammon had the highest growth rate: almost doubling in size in six years. During that same period, the employment growth has been about 11,000 in the four counties – growth of 17% from 2000. With the growth in population and employment in the corridor, there has been increasing pressure for development along US 20 at the intersections and interchanges.

2.2 Forecasts of Growth in the Corridor and its Impact on the Vision

The twenty-year forecasts of population and employment growth illustrated in **Figures 2** and **3** reflect a continuation of urbanization of the corridor but concentrated in the existing urbanized areas of Idaho Falls (Idaho Falls, Ammon, Iona and Ucon) and Rexburg. The twenty-year population growth in these areas will constitute 75% of the growth within the four counties in the corridor.

Figure 2 – Twenty-Year Growth by Subarea

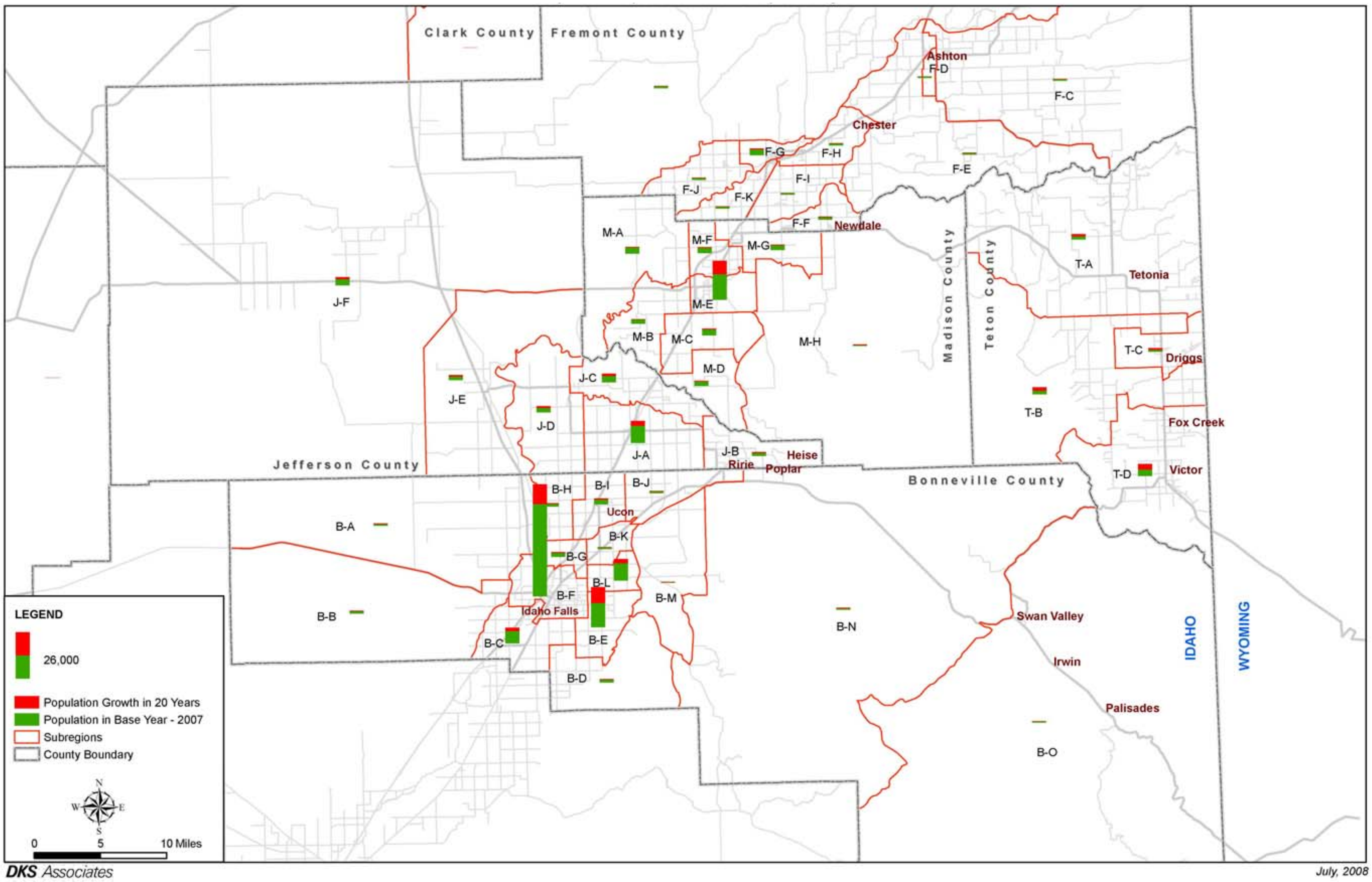
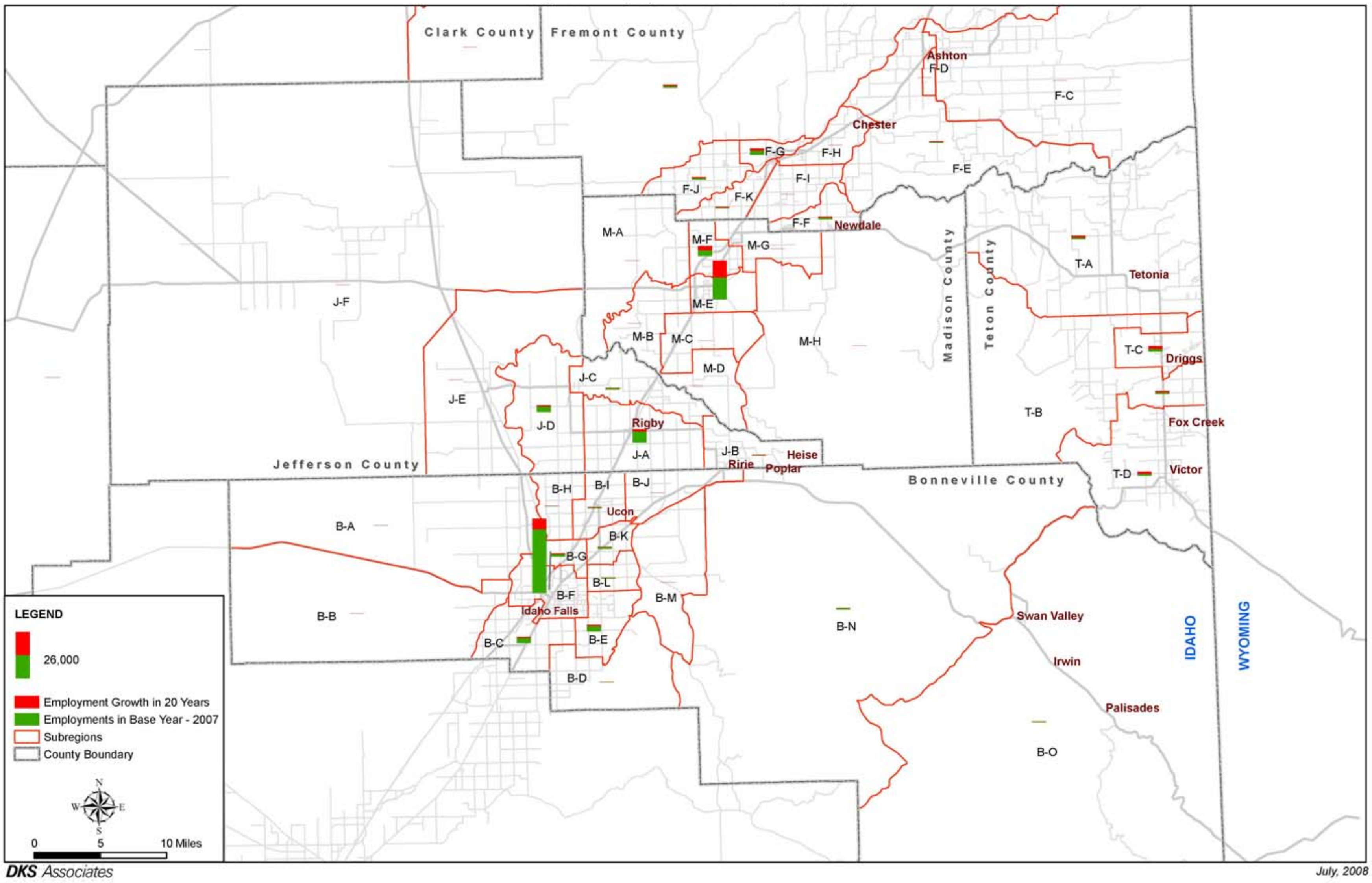


Figure 3 – Twenty-Year Employment Growth by Subarea



Despite the concentration of population growth within the Idaho Falls and Rexburg urban areas, much of the growth that occurs in the other parts of the counties in the corridor is likely to be adjacent to or near US 20 because of the superior access provided by the roadway. This is especially true for new commercial development for which roadway access is an important competitive factor. This is likely to lead to more urbanization of the other parts of the US 20 corridor besides the Idaho Falls and Rexburg areas. As this occurs, achieving full grade separation of existing intersections will be important to maintain the safety and level of service of the roadway.

The resulting forecasts of AADT are contained in **Table 2** and illustrated graphically in **Figure 4.** The forecasts represent an increase in volume of roughly 50% in Segments 1A (Idaho Falls), 1B (Idaho Falls to Ucon) and 2 (Ucon to Rigby). The growth was roughly 90% in the Segments 3 (Rigby to Rexburg) and 4A (Rexburg). The least growth was in the northern segments of the corridor. Growth in Segments 4B (Sugar City), 5 (St. Anthony), 6 (St. Anthony to Chester) and 7 (Chester to End of Corridor) was roughly 20%. This growth is 50% to 75% higher than the growth in population and employment for the towns in the segments, but a growth rate higher than the rate of population and employment growth can almost certainly be expected. There has been a rapid increase in commuting along the corridor as new employment opportunities have emerged in Idaho Falls and Rexburg. Expansion of the Brigham Young University campus in Rexburg is also drawing students and staff from throughout the corridor. Increases in land values and housing costs have also resulted in students and employees commuting longer distances in order to have lower-cost housing in northern Madison County and Fremont County. Finally, an increase in the popularity of outdoor recreational activity is likely to result in a significant increase on US 20 that is not related to the population or employment along the corridor.

2.3 Future Form of US 20

The analysis conducted for the Corridor Plan Refresh does not suggest the need for any significant change in the form of US 20 except to continue the access management changes proposed in the 2000 Corridor Plan to eliminate at-grade intersections on the four-lane divided portion of the corridor. There will also be a need to accommodate more turning vehicles as the volume on the corridor increases on those portions of the corridor where at-grade intersections are not eliminated. Some modification of the roadway will be necessary to allow for more complex turning patterns and passing lanes may be required in the northern portion of the corridor (Segment 7) if the volume of traffic increases at the rate reflected in the upper bound of traffic forecasts.

2.4 Summary of Changes in Vision, Function and Form of the Corridor

The analysis conducted for the Corridor Plan Refresh does not suggest the need for any significant change in the vision, function or form of the US 20 corridor as articulated in the 2000 Corridor Plan. Population and employment growth in the corridor are not expected to change the character of the land use in the corridor over the next twenty years in a way that was not already reflected in the 2000 Corridor Plan. Steady growth in the volume of traffic will increase the need for access management and development of frontage roads and local road networks where access is restricted. Modifications to accommodate turning traffic safely and efficiently will be needed where direct access is not eliminated.

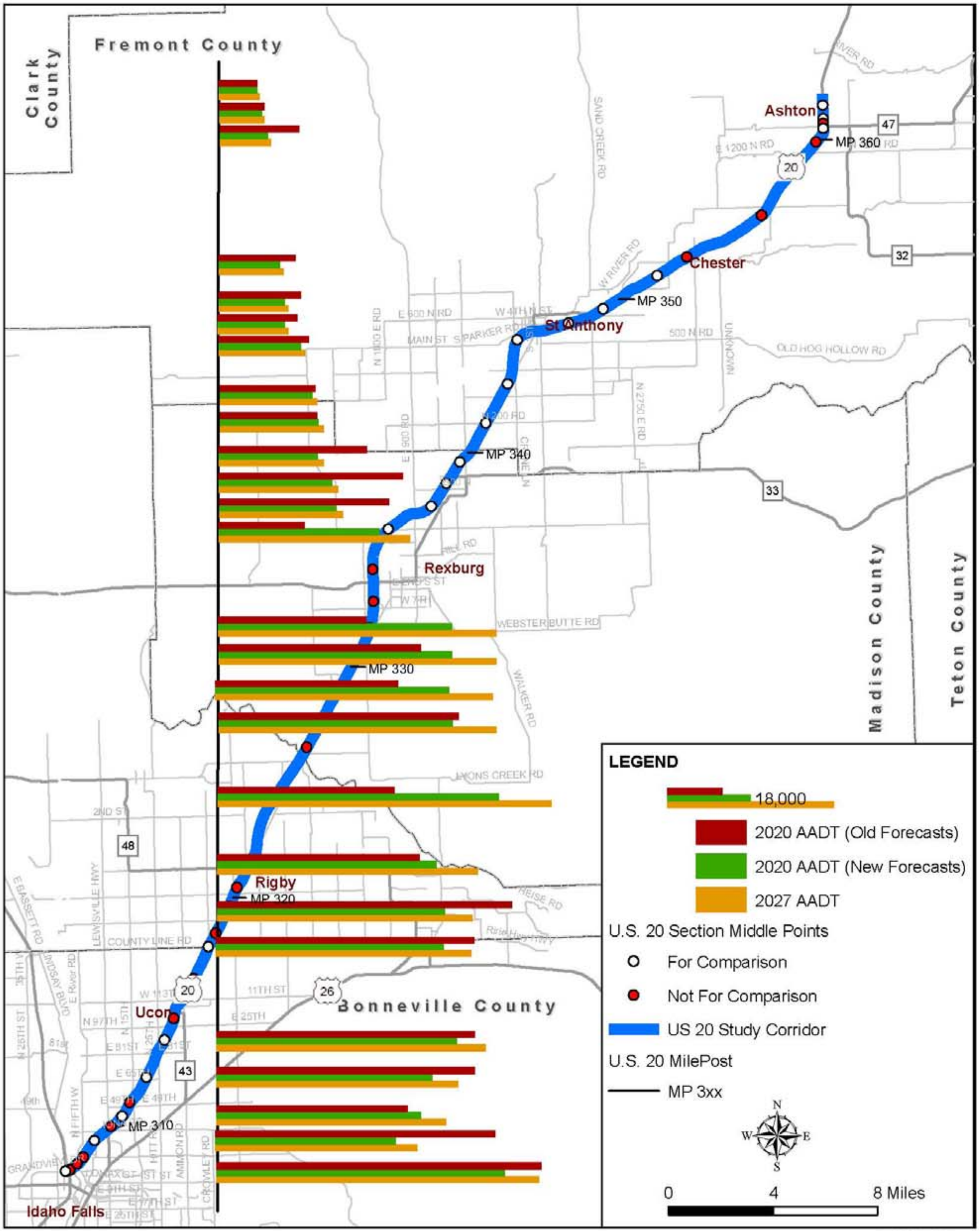
Table 2 – Traffic Volume Forecasts for US 20

Highway Section									2027 AADT		2027 DDV		% Change '06 to '27		% Diff.
Begin MP	End MP	Area	From	To	No. of Lanes	2006 AADT	2006 DDV	Growth Rate[1]	Linear Growth	Compound Growth	Linear Growth	Compound Growth	Linear Growth	Compound Growth	Linear vs Compound
Bonneville County															
307.45	307.63	Idaho Falls	SATURN AV	I-15 NB OFF RMP	4	24,000	26,530	2.25%	35,340	38,295	39,065	42,332	47.25%	59.56%	8.36%
307.63	307.82	Idaho Falls	I-15 NB OFF RMP	IC# 307	4	23,000	25,440	2.25%	33,868	36,699	37,460	40,593	47.25%	59.56%	8.36%
307.82	308.32	Idaho Falls	IC# 307	IC# 308	4	30,215	31,990	2.25%	44,491	48,211	47,105	51,044	47.25%	59.56%	8.36%
308.32	308.5	Idaho Falls	IC# 308	IC# 309	4	25,000	27,620	2.25%	36,813	39,891	40,670	44,071	47.25%	59.56%	8.36%
308.5	309.88	Idaho Falls	IC# 309	LEWISVILLE HWY	4	15,000	16,700	2.25%	22,088	23,934	24,591	26,647	47.25%	59.56%	8.36%
309.88	310.13	Northeast of Idaho Falls	LEWISVILLE HWY	IC# 310	4	17,000	18,890	2.25%	25,033	27,126	27,816	30,141	47.25%	59.56%	8.36%
310.13	311.05	Northeast of Idaho Falls	IC# 310	TELEFORD RD (49TH N)	4	17,089	18,890	2.25%	25,170	27,277	27,822	30,152	47.28%	59.62%	8.37%
311.05	311.33	Northeast of Idaho Falls	TELEFORD RD (49TH N)	ST LEON RD (15TH E)	4	17,000	18,890	2.25%	25,033	27,126	27,816	30,141	47.25%	59.56%	8.36%
311.33	313.39	Southwest of Iona	ST LEON RD (15TH E)	HITT RD (25TH E)	4	18,000	19,980	2.25%	26,505	28,721	29,421	31,881	47.25%	59.56%	8.36%
313.39	314.51	Near Ucon	HITT RD (25TH E)	FAIRVIEW RD (97TH N)	4	20,000	22,160	2.25%	29,450	31,912	32,631	35,359	47.25%	59.56%	8.36%
314.51	315.23	Near Ucon	FAIRVIEW RD (97TH N)	SH-43	4	20,000	22,160	2.25%	29,450	31,912	32,631	35,359	47.25%	59.56%	8.36%
315.23	317.91	Northeast of Ucon	SH-43	IC# 318	4	19,000	21,070	2.25%	27,978	30,317	31,026	33,620	47.25%	59.56%	8.36%
Jefferson County															
317.91	317.92	Northeast of Ucon	IC# 318 WB	IC# 318 EB	4	19,000	21,070	2.25%	27,978	30,317	31,026	33,620	47.25%	59.56%	8.36%
317.92	319.07	Southwest of Rigby	IC# 318 EB	100N RD	4	19,000	21,070	2.25%	27,978	30,317	31,026	33,620	47.25%	59.56%	8.36%
319.07	320.24	Southwest of Rigby	100N RD	E 200N RD	4	19,000	21,070	2.25%	27,978	30,317	31,026	33,620	47.25%	59.56%	8.36%
320.24	320.64	Near Rigby	E 200N RD	US-20B	4	19,000	21,070	4.30%	36,157	45,996	40,096	51,008	90.30%	142.09%	27.21%
320.64	322.28	Near Rigby	US-20B	NA	4	15,000	16,700	4.30%	28,545	36,313	31,780	40,428	90.30%	142.09%	27.21%
322.28	326.22	Northeast of Rigby	NA	NA	4	19,259	21,070	4.30%	36,631	46,578	40,075	50,958	90.20%	141.85%	27.16%
Madison County															
326.22	326.81	Near Lorenzo	NA	4300 W RD (NELSON RD)	4	19,000	21,070	4.51%	36,982	47,046	41,011	52,172	94.64%	147.61%	27.21%
326.81	328.23	Near Thornton	4300 W RD (NELSON RD)	THORNTON RD (4985S)	4	16,000	17,800	4.30%	30,448	38,734	33,873	43,091	90.30%	142.09%	27.21%
328.23	329.67	Near Thornton	THORNTON RD (4985S)	BURTON RD (3800S)	4	16,000	17,800	4.30%	30,448	38,734	33,873	43,091	90.30%	142.09%	27.21%
329.67	331.43	Southwest of Rexburg	BURTON RD (3800S)	NA	4	16,000	17,800	4.30%	30,448	38,734	33,873	43,091	90.30%	142.09%	27.21%
331.43	331.94	Rexburg	NA	ACCESS RD	4	16,000	17,800	4.30%	30,448	38,734	33,873	43,091	90.30%	142.09%	27.21%
331.94	333.44	Rexburg	ACCESS RD	SH-33	4	13,000	14,520	4.30%	24,739	31,471	27,632	35,151	90.30%	142.09%	27.21%
333.44	334.44	Rexburg	SH-33	NA	4	11,000	12,340	4.30%	20,933	26,630	23,483	29,873	90.30%	142.09%	27.21%
334.44	336.85	Rexburg	NA	FAS 6770	4	11,000	12,340	4.30%	20,933	26,630	23,483	29,873	90.30%	142.09%	27.21%
336.85	338.26	Near Sugar City	FAS 6770	CENTER ST	4	12,000	13,430	1.48%	15,718	15,957	17,591	17,858	30.99%	32.97%	1.52%
338.26	338.93	Near Sugar City	CENTER ST	4000 NORTH RD	4	11,000	12,340	2.39%	16,528	16,778	18,541	18,822	50.25%	52.53%	1.52%
338.93	340.22	Northeast of Sugar City	4000 NORTH RD	NA	4	9,600	10,810	3.37%	16,402	16,651	18,470	18,750	70.86%	73.45%	1.52%
Fremont County															
340.22	342.54	Southwest of St. Anthony	NA	300N RD	4	9600	10810	1.83%	13,283	13,484	14,957	15,184	38.36%	40.46%	1.52%
342.54	343.64	Southwest of St. Anthony	300N RD	400N RD	4	9000	10150	1.63%	12,078	12,261	13,621	13,828	34.20%	36.23%	1.52%
343.64	346.01	St. Anthony	400N RD	NA	4	8000	9060	1.73%	10,907	11,073	12,353	12,540	36.34%	38.41%	1.52%
346.01	347.85	St. Anthony	NA	2600E RD	4	6500	12090	1.47%	8,509	8,638	15,828	16,068	30.92%	32.90%	1.52%
347.85	350.73	NE of St Anthony	2600E RD	700N RD	4	6400	11900	1.42%	8,313	8,439	15,458	15,692	29.90%	31.87%	1.52%
350.73	352.74	SW of Chester	700N RD	800N RD (CHESTER CONN)	4	6000	11160	1.41%	7,771	7,888	14,453	14,672	29.51%	31.47%	1.52%
352.74	353.40	Chester	800N RD (CHESTER CONN)	3000E RD	2	6000	11160	1.34%	7,692	7,808	14,307	14,523	28.19%	30.14%	1.52%
353.40	359.34	Southwest of Ashton	3000E RD	RECLAMATION RD	2	4000	7470	1.24%	5,045	5,121	9,421	9,564	26.12%	28.03%	1.52%
359.34	360.43	Ashton	RECLAMATION RD	IDAHO ST	2	4000	7470	1.39%	5,171	5,249	9,657	9,803	29.27%	31.23%	1.52%
360.43	360.57	Ashton	IDAHO ST	JCT SH-47	4	4700	8760	1.40%	6,078	6,170	11,327	11,499	29.31%	31.27%	1.52%
360.57	360.79	Ashton	JCT SH-47	CHERRY ST	2	3900	7290	1.34%	4,998	5,073	9,341	9,483	28.14%	30.08%	1.52%
360.79	360.92	Ashton	CHERRY ST	SPRUCE ST	2	4100	7660	1.34%	5,254	5,333	9,816	9,964	28.14%	30.08%	1.52%
360.92	361.82	North of Ashton	SPRUCE ST	1425N RD LT	2	3700	8670	1.34%	4,741	4,813	11,110	11,278	28.14%	30.08%	1.52%

[1] Growth rates are count-based unless shaded in blue. Those in blue are model-based and are used because the model-based growth rate was higher.

Note: MP – Milepost, AADT – Average Annual Daily Traffic, DDV – Daily Design Volume

Figure 4 – Comparison of Traffic Volume Forecasts for US 20



3 Appraisal of Corridor Health

3.1 Definition the Components of the Health of the Corridor

Because the overall heath of the corridor results from a combination of the characteristics described above and not just from one of them, a method is needed for combining the factors into a single measure. Developing such a single measure requires subjective judgment and should ultimately reflect the priorities of the residents of the corridors and those that use the facilities. As an initial attempt at a scoring method, the formulation in **Table 3** has been developed.

Table 3 – Scoring System for Corridor Health Appraisal

Factor	Weight	Factor Score
Safety	40%	Where X=.35*(% of State VMT for Category with Fatal Accident Rate greater than the Segment) + .35*(% of State VMT for Category with Injury Accident Rate greater than the Segment) + .3*(% of State VMT for Category with Total Accident Rate greater than the Segment)
Travel Time and Delay	30%	1/LOS where LOS = .5 * (Link LOS for Average Peak Hour Conditions) + .2 * (Link LOS for Design Hour Volume) + .2 * (Int. LOS for Average Peak Hour Conditions) + .1 * (Int. LOS for Design Hour Volume) Where LOS = 1 for C, 2 for D, 3 for E and 5 for F
Ride Quality	10%	1/PC where PC= 1 for Good, 2 for Fair, 3 for Poor and 5 for Very Poor Pavement Condition Rating
Points of Access	10%	=1/[(Number of Access Points per mile) / (Number Allowed by Guidance for the Roadway Type)]
Shoulder Width	10%	Average of Width/Standard up to 1

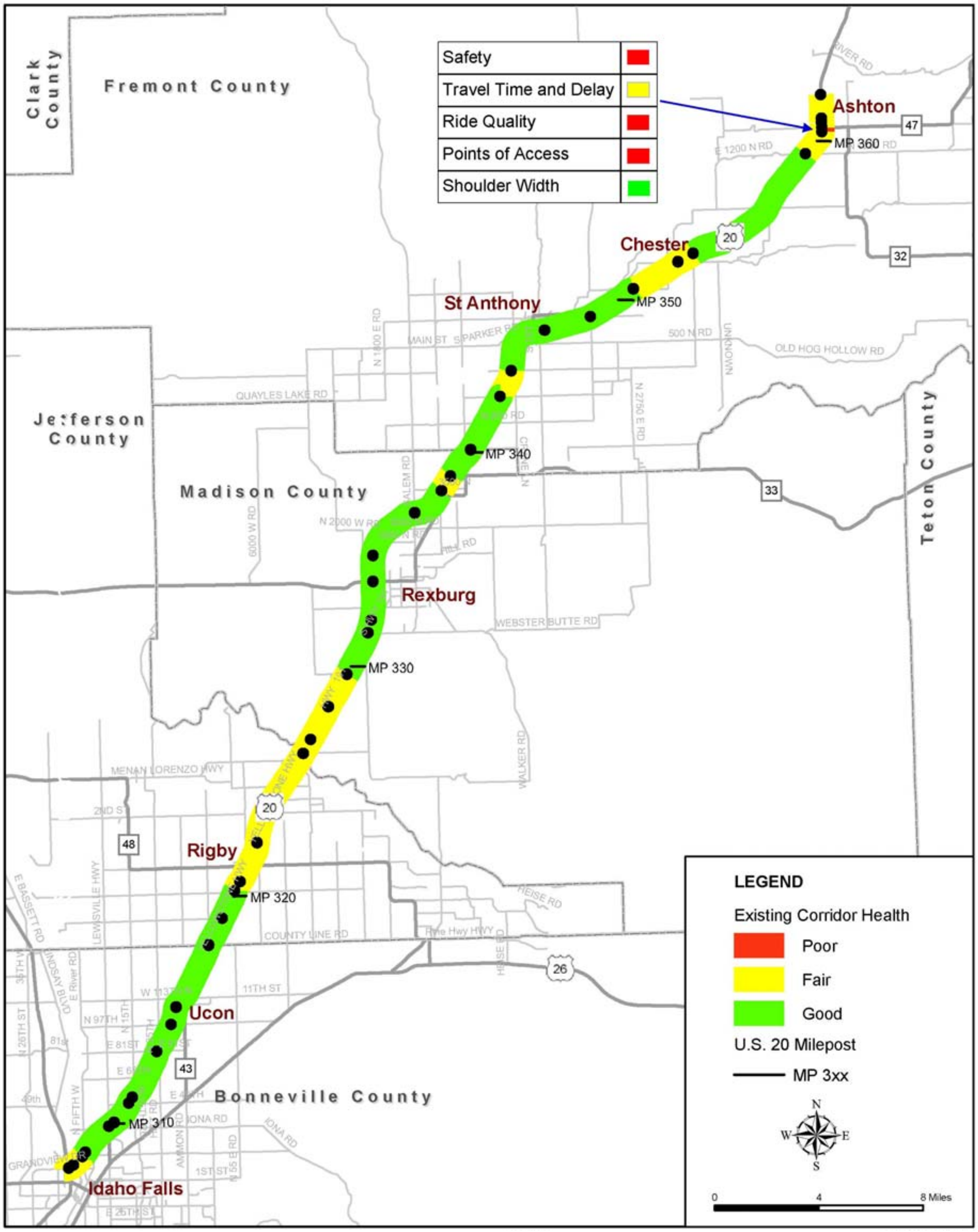
Note: LOS – Level of Service, VMT – Vehicle Miles of Travel, Int. – Intersection, PC – Pavement Condition

Using the corridor health rating system, the existing (2007) health of the corridor was appraised and the results illustrated in **Figure 5**. The existing health of the corridor is good in all the portions of the corridor that are built to freeway standards with no at-grade crossings. The existing health for most of the remainder of the corridor is either good or fair. One small portion of the corridor in Ashton is rated as poor because of poor ratings for **Safety**, **Ride Quality** and **Points of Access**.

Segment 7 (Chester to End of Corridor) has the lowest overall scores ranging from .37 to .71. Low scores resulted primarily from the numerous points of access. Accident rates and delay due to link capacity were also issues for some of the portions of the segment. Poor pavement conditions for some portions of the segment were also an issue. Shoulder width was not an issue in the segment.

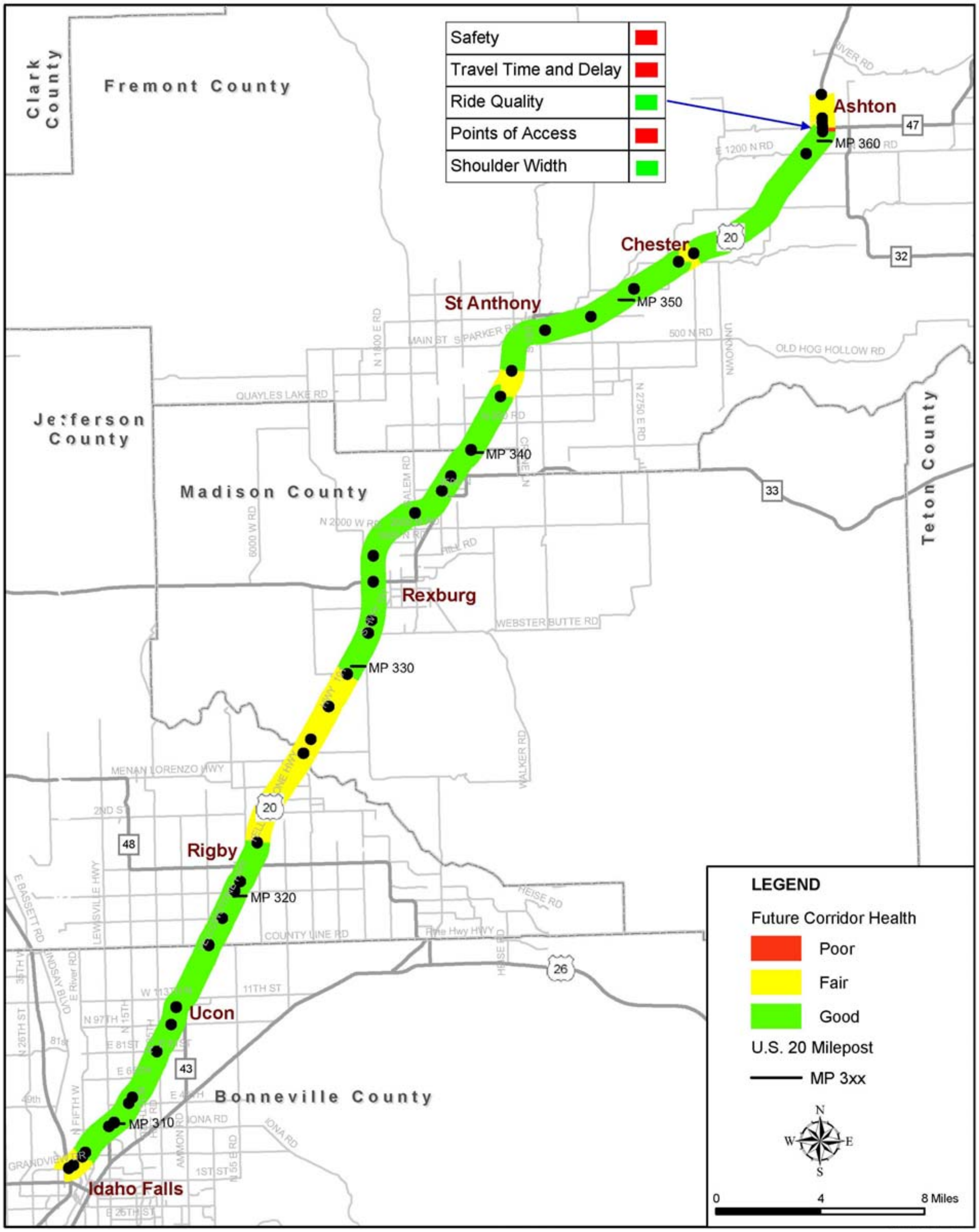
Segment 3 (Rigby to Rexburg) has the second lowest overall scores ranging from .51 to .73. The low scores in this segment are a result of poor pavement condition, high accident rates, delay at at-grade intersections, and numerous points of access. Most of these issues would be addressed by the recommendation from the 2000 Corridor Plan that all at-grade intersections be eliminated in this segment either by replacing them with grade-separated interchanges or by eliminating the access for the cross streets. All of the remaining segments of the corridor had values of greater than .7. Ride quality due to pavement condition was the only significant deficiency.

Figure 5 – Existing (2007) Health Rating for the US 20 Corridor



The corridor health was also appraised for the 2027 forecast year and the results are presented in **Figure 6**. There is virtually no change in the corridor health ratings of the segments. All parts of the corridor are either good or fair except for the small portion in Ashton which is still rated poor. In the future condition, the poor rating for this segment is due to poor ratings for **Safety**, **Travel Time and Delay** and **Points of Access**.

Figure 6 – Future (2027) Health Rating for the US 20 Corridor



Segment 3 (Rigby to Rexburg) and Segment 7 (Chester to End of Corridor) still have the lowest scores. A portion of Segment 3 improves because the planned construction of the Menan-Lorenzo Interchange will eliminate an intersection with poor existing level of service. Planned pavement rehabilitation in the vicinity of Rigby will also improve the score for ride quality. The score for a portion of Segment 6 (St. Anthony) representing about half of the segment has a decrease in score to a point below .70 because of deterioration in intersection level of service at an at-grade intersection.

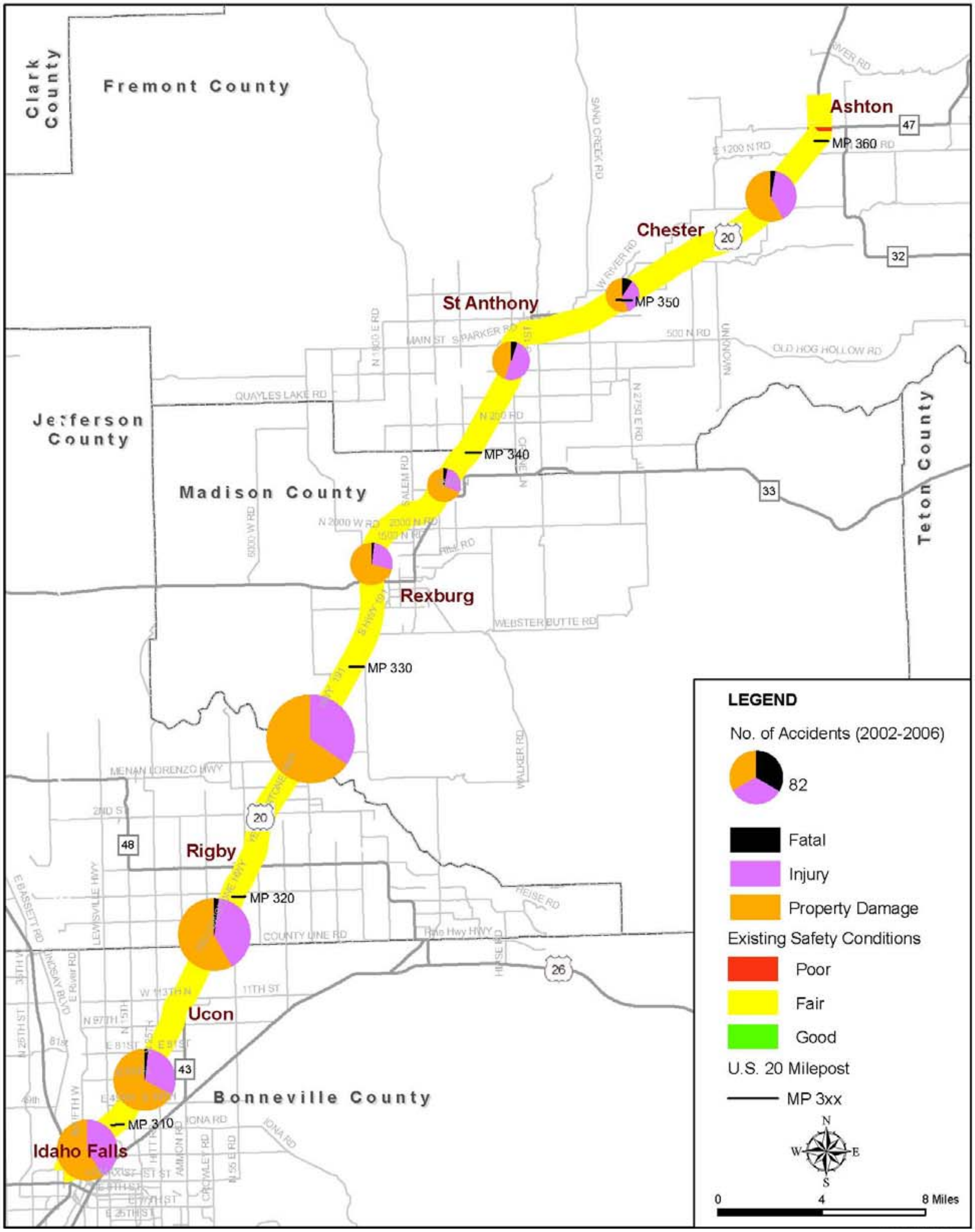
3.2 Safety

3.2.1 Accident Analysis

The 2006 Traffic Collision Analysis Report prepared by ITD's office of Highway Operations and Safety was reviewed to identify the traffic accident level and historic collision trend on state highways in Idaho. The summary provided in the report is illustrated in **Figure 7.** The pie charts in the graphic identify the total number of accidents over the six years between 2001 and 2006 and the proportions of accidents that included fatalities, injuries or property damage only. The color given to the band for each of the six segments of the corridor is based on the percentage of VMT in the state for the same classification of roadway that exceeded the rate for the segment. A rating of "poor" indicates that only 30% of the VMT in the state on roads in the state system of the same type had a higher accident rate. A rating of "fair" (yellow) indicates that 30% to 50% had higher accident rates. A good rating is given to roadway segments with an accident rate less than 70% of the other segments within the state.

Safety is an issue in the corridor, but there are no "high accident locations" identified by ITD and the entire corridor is rated "fair". The greatest number of accidents were in Segment 3 where volumes are high and there are numerous at-grade crossings. Although the number of accidents is lower at the north end of the corridor, the proportion of accidents that are fatalities or injury accidents is higher.

Figure 7 – Accidents (2002 – 2006) on the US 20 Study Corridor



Although there is not a good analytical method for estimating changes in accident rates, they are likely to increase in the corridor with increases in volume. As volumes increase on the corridor roadways, the number of potential points of conflict will also increase and the likelihood of crashes will also likely increase. This is particularly true at at-grade intersections where the increase in volume will produce more turning movements to and from US 20, more turns across lanes of traffic (if permitted), fewer gaps in traffic on US 20 to allow for left turns from US 20 or traffic from side streets crossing lanes of traffic on US 20. It may become necessary to install traffic signals at some of the high-volume at-grade intersections in the future and this would result in a significant degradation in level of service on US 20.

Conflict can also increase at the points of access and egress for the grade-separated interchanges where entering and exiting traffic must weave or merge with through traffic. The potential conflict for interchange ramps is much less than for at-grade intersections, however.

Although the number and rate of total accidents is likely to increase with traffic volume, the severity of the accidents may not increase at the same rate. Difference in speed of traffic on a high-speed road like US 20 is one of the major causes of accidents. This has been a problem on US 20 because the average speed has been well above the posted 55 mile per hour speed limit

3.3 Travel Time and Delay

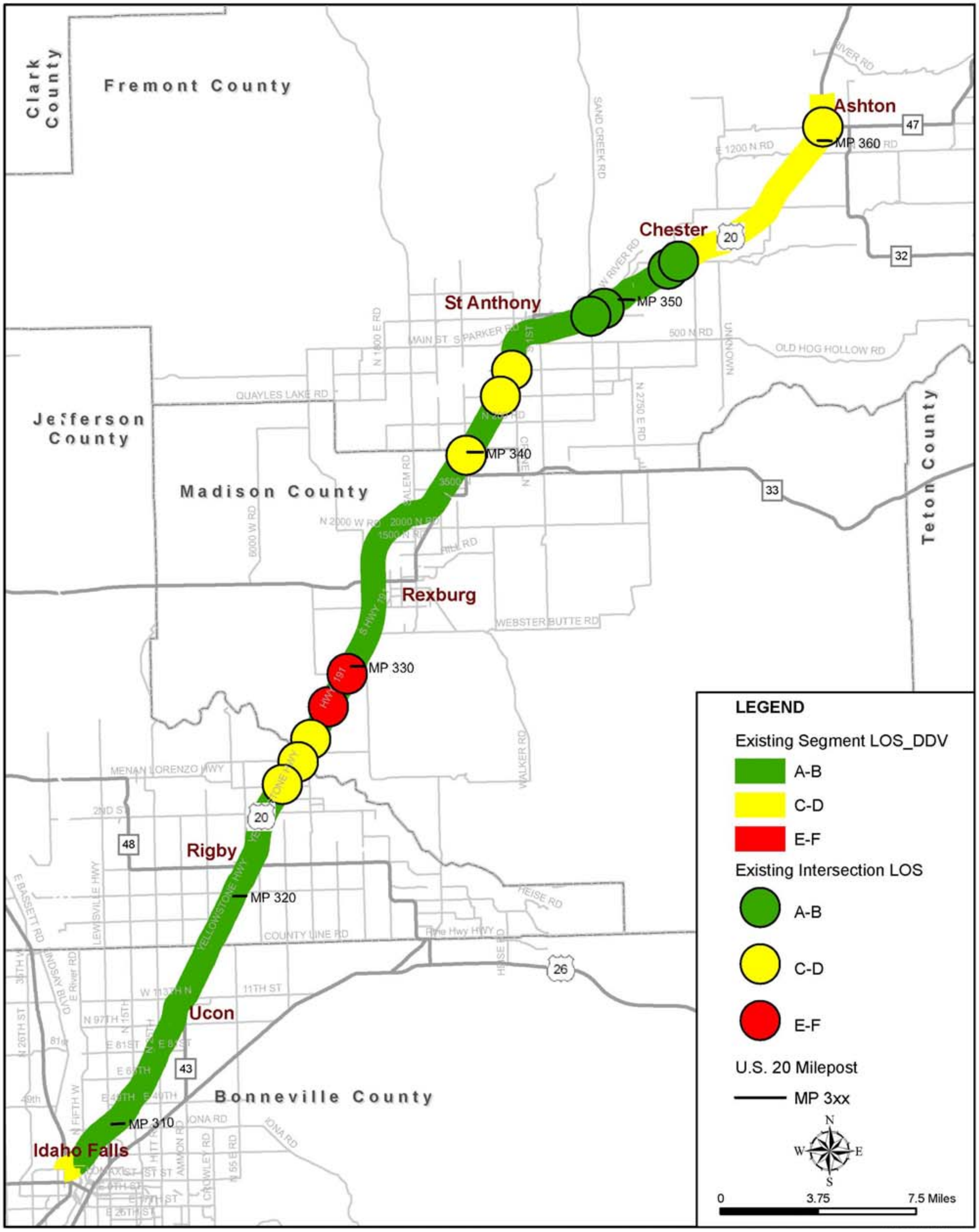
Level of service (LOS) provides a measure of operational conditions experienced by drivers on a roadway. A planning-level estimate of LOS for each roadway segment on US 20 was conducted based on the 2006 design hour volume (the 30th highest hour of the year), to reflect the operation of the corridor during the peak travel season. The LOS on each segment of the corridor was defined based on the methodologies suggested in the 2000 Highway Capacity Manual (HCM). For the missing information, default values recommended by ITD's Congestion Analysis for Corridor Studies were used. The expected level of service based on the design hour volume is presented in **Figure 8**. The corridor in general would operate with an acceptable level of service of C or better except the entire 2-lane segment with level of service D or worse during the peak travel season. Two intersections would also operate at level of service E or F. Both of these are in Segment 3 between Rigby and Rexburg.

3.3.1 Intersection Turning Movement Volumes

In the 2000 Corridor Plan, intersection operational deficiency for at-grade intersections has been reported along the US 20 corridor. Some of the problematic at-grade intersections have been upgraded to full interchanges or closed to improve safety on the corridor. New interchanges introduced since the 2000 Corridor Plan include Sugar City half interchange, SH 33 interchange, St Leon Road interchange, Hitt Road interchange, County Line Road interchange, and a closure of Holbrook Road.

For this study, the operations of the other major at-grade intersections along US 20 identified in the 2000 Corridor Plan were analyzed. Turning movement counts were conducted during the afternoon peak hours between 3 P.M. and 6 P.M.

Figure 8 – Existing Level of Service Based on Daily Design Volume



The results of the intersection LOS analysis revealed that some of the side street turning movements at the intersections are operating at LOS F. Locations with turn movement LOS deficiencies are listed in **Table 4**. According to the STIP listing for the year 2007 – 2011 and project status on the ITD website, the intersection at Menan Lorenzo Highway will be upgraded to a full interchange in 2008. This project could improve safety and reduce delay at this intersection. ITD has also approved the location of Thornton Road interchange, however, the funding and construction date for this project have not been identified.

Table 4 – Intersections with Turning Movement Deficiencies (with AADT)

Intersection	Segment	Mile Post	Cross Street
1	3	328.232	Thornton Road
2	3	329.667	Burton Road

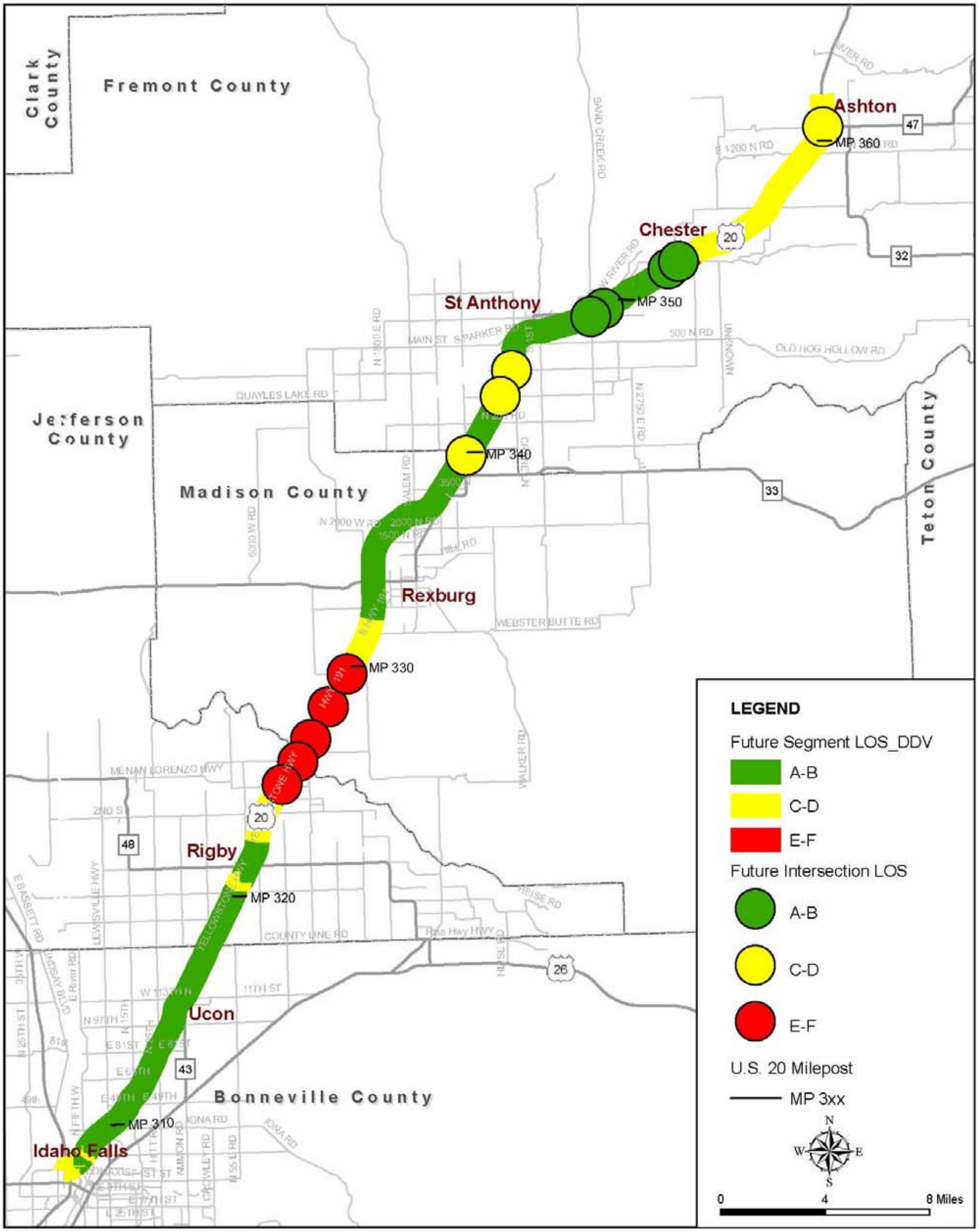
The forecasts volumes for 2027 were used to analyze the expected level of service using the same procedures used for the existing condition. The results are illustrated in **Figure 9**. Link level of service was analyzed for design hour volumes. Despite the large projected increase in traffic volume in the corridor, there was very little change in link level of service. The greatest increases in traffic occurred on the four-lane segment of the corridor where there is currently substantial excess capacity. The two-lane segments are expected to have far less growth and only a few sections within Segment 7 are expected to have a change in level of service. The analysis of LOS for future travel provides additional evidence that widening of the roadway may ultimately be required to maintain reasonable travel times on the route. This may take the form of passing lanes at critical points or eventually a second lane in each direction in portions of Segment 7. Consideration should be given to protection of right of way for future expansion.

The estimated current year turning movement volumes were projected to year 2027 volumes by applying the annual average growth rate on the corridor segment estimated from historic traffic counts along the corridor segment. The level of service analysis indicates that the side street turning movements at both intersections with deficiencies under existing conditions would continue to experience long delays in the future as traffic on US 20 corridor increases. As indicated in **Figure 9**, five intersections will have level of service E or F under the design hour conditions in 2027. They are listed in **Table 5.**

Table 5 – Intersections with Turning Movement Deficiencies (with DHV) in 2027

Intersection	Segment	Mile Post	Cross Street
1	3	324.75	Ellis Road
2	3	325.988	Menan Lorenzo Hwy
3	3	326.81	S. 4300 W.
4	3	328.232	Thornton Road
5	3	329.667	Burton Road

Figure 9 – Future Level of Service on US 20 Based on Daily Design Volumes



3.4 Ride Quality

ITD classifies pavement condition as Good, Fair, Poor, or Very Poor based on a combination of two indices: the Cracking Index (CI) and the Roughness Index (RI). Both indices provide ratings for roadway segments between 0 and 5 based on the observed condition of the roadway. The Cracking Index (CI) gives a rating of a roadway surface's visual distress, while the Roughness Index (RI) is a rating of surface smoothness. The higher the CI and RI values, the better the roadway pavement condition. The criteria for pavement condition for "Interstate Highways and Arterials" recommended in the Idaho State Highway Plan are listed in **Table 6**.

Table 6 – Criteria for Interstate Highway and Arterials' Pavement Condition

Pavement Condition	CI, RI values
Good	(CI or RI) > 3.0
Fair	2.5 <= (CI or RI) <= 3.0
Poor	2.0 <= (CI or RI) < 2.5
Very Poor	(CI or RI) < 2.0

The Cracking Index and Roughness Index for the study corridor segments by direction were obtained from the ITD 2008 Pavement Management System Study (SYSTDY) Report. Based on indices values from observations in 2007, about 55 percent of the US 20 corridor is in "good" condition, about 6 percent is in "fair" condition, about 20 percent is in "poor" condition and about 19 percent is in "very poor" condition as indicated in **Figure 10**. The roadway segments of pavement on US 20 with deficient pavement conditions are listed in **Table 7**.

Figure 10 – Pavement Condition Summary

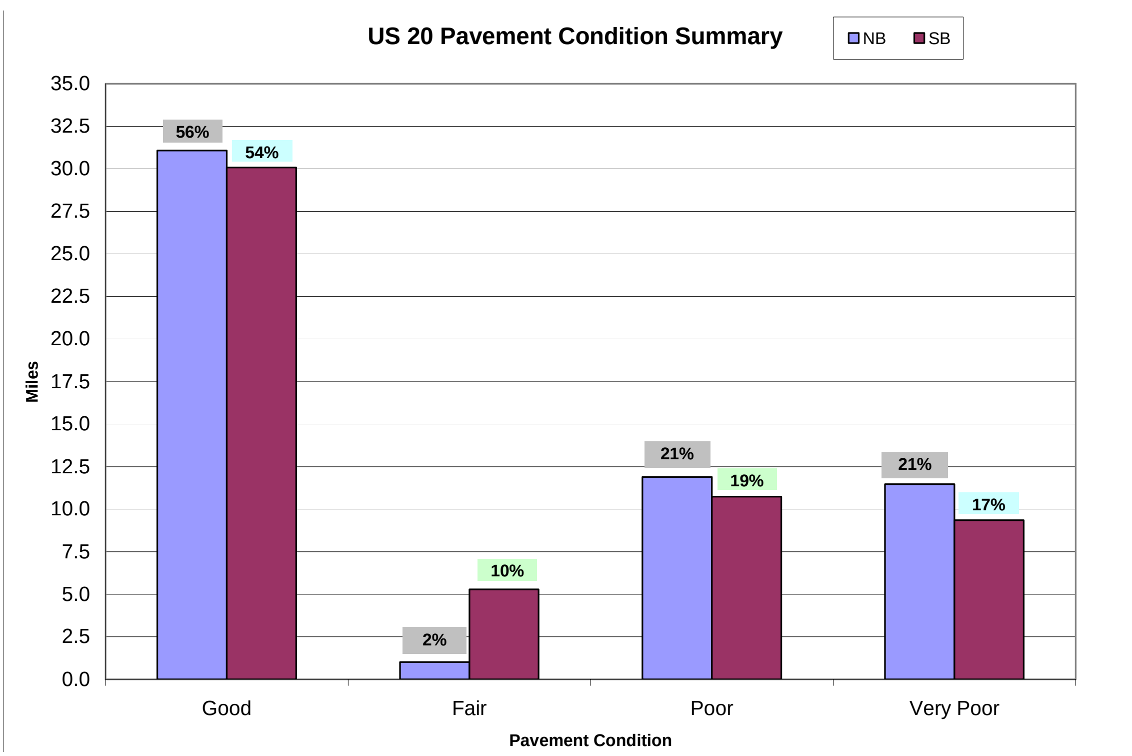


Table 7 – Pavement Deficiencies by Direction

Highway Section (Mileposts)	Segment	Area	Pavement Condition
Undivided			
307.45 – 307.695	1A	Idaho Falls	Poor
360.343 – 360.572	7	Ashton	Poor
Northbound			
320.088 – 321.092	2	Near Rigby	Very Poor
321.092 - 322.052	2	Near Rigby	Poor
322.052 – 327.64	3	Rigby – Lorenzo	Very Poor
327.64 – 331.427	3	Near Thornton	Poor
333.341 – 333.659	4A	Near Rexburg	Poor
336.859 – 338.332	4B	Near Sugar City	Very Poor
338.332 - 338.927	4B	Near Sugar City	Poor
338.927 - 340.08	4B	Northeast of Sugar City	Very Poor
340.08 – 345.833	5	Southwest of St. Anthony	Poor
345.833 – 348.082	6	St. Anthony	Very Poor
Southbound			
320.088 – 321.092	2	Rigby	Poor
321.092 – 326.274	2	Rigby	Very Poor
326.274 – 331.427	3	Lorenzo – Thornton - Rexburg	Poor
333.341 – 333.659	4A	Near Rexburg	Poor
336.859 – 338.165	4B	Near Sugar City	Poor
338.165 – 340.080	4B	Sugar City	Very Poor
343.350 – 345.833	5	Southwest of St. Anthony	Poor
345.833 – 348.082	5	Southwest of St. Anthony	Very Poor

The majority of the segments were reported with "poor" or "very poor" pavement condition in the 2000 Corridor Plan. The pavement has been repaired or improved in some sections which are not included in the list of pavement deficiency as reported in **Table 7**. These are primarily in Segments 1A (Idaho Falls), 1B (Idaho Falls to Ucon), 2 (Ucon to Rigby) and 7 (Chester to Ashton Hill Bridge). Other segments that did not have pavement rehabilitation projects have gotten worse, however, and the percentage of the corridor rated "poor" or "very poor" has increased from 26% to 39%. There are several pavement reconstruction and rehabilitation projects planned for the US 20 corridor as reflected in the Statewide Transportation Improvement Program (STIP). A project list is provided in Section 4 of this memorandum.

3.5 Shoulder Width

Paved right- and left-hand shoulders are generally provided along US 20, but the width of the shoulders varies along different segments of the corridor. **Figures 11** and **12** illustrate the existing right- and left-hand shoulder widths respectively along the corridor. An eight- to twelve-foot wide paved right-hand shoulder exists from Idaho Falls to Ashton except for one roadway section northeast of Sugar City, as indicated in **Table 8**, where the paved shoulder is only five feet wide. This section of roadway does not meet the 8-foot guideline recommended by AASHTO, but was not identified as a deficient segment in the previous corridor study. This may reflect a recent movement by ITD toward a more context-sensitive design and practical approach that recognizes the rural and scenic nature of many of the state route corridors in eastern Idaho. Because US-20 is frequently used as a bicycle, ATV and snow mobile route; a sufficiently wide and well-maintained roadway shoulder is desirable for this corridor. Because of the relatively high traffic volumes and a high speed limit a sufficiently wide shoulder is needed to provide safe access for these users and also to allow vehicles making an emergency stop to pull off clear of the travel lanes.

Table 8 – Segments with Right-hand Shoulder Width Below AASHTO Guidelines

Highway Section (Milepost – Milepost)	Segment	Area	Right-hand Paved Shoulder Width (feet)
340.08 – 343.35 [1]	4B	Northeast of Sugar City	5

Note:
1. Northbound lanes only

A 4-foot left-hand paved shoulder is provided for the majority of the divided corridor segments except for the four identified in **Table 9**. There are approximately twelve miles of the corridor northeast of Chester that are 2-lane undivided (and therefore no left-hand shoulder). **Table 9** identifies the one segment of divided roadway for which the left-hand shoulder width is less than the AASHTO guidelines.

Table 9 – Segments with Left-hand Shoulder Width Below AASHTO Guidelines

Highway Section (Milepost – Milepost)	Segment	Area	Left-hand Paved Shoulder Width (feet)
307.695 – 308.19	1A	Idaho Falls	0

Figure 11 – Existing Right Hand Paved Shoulder Width

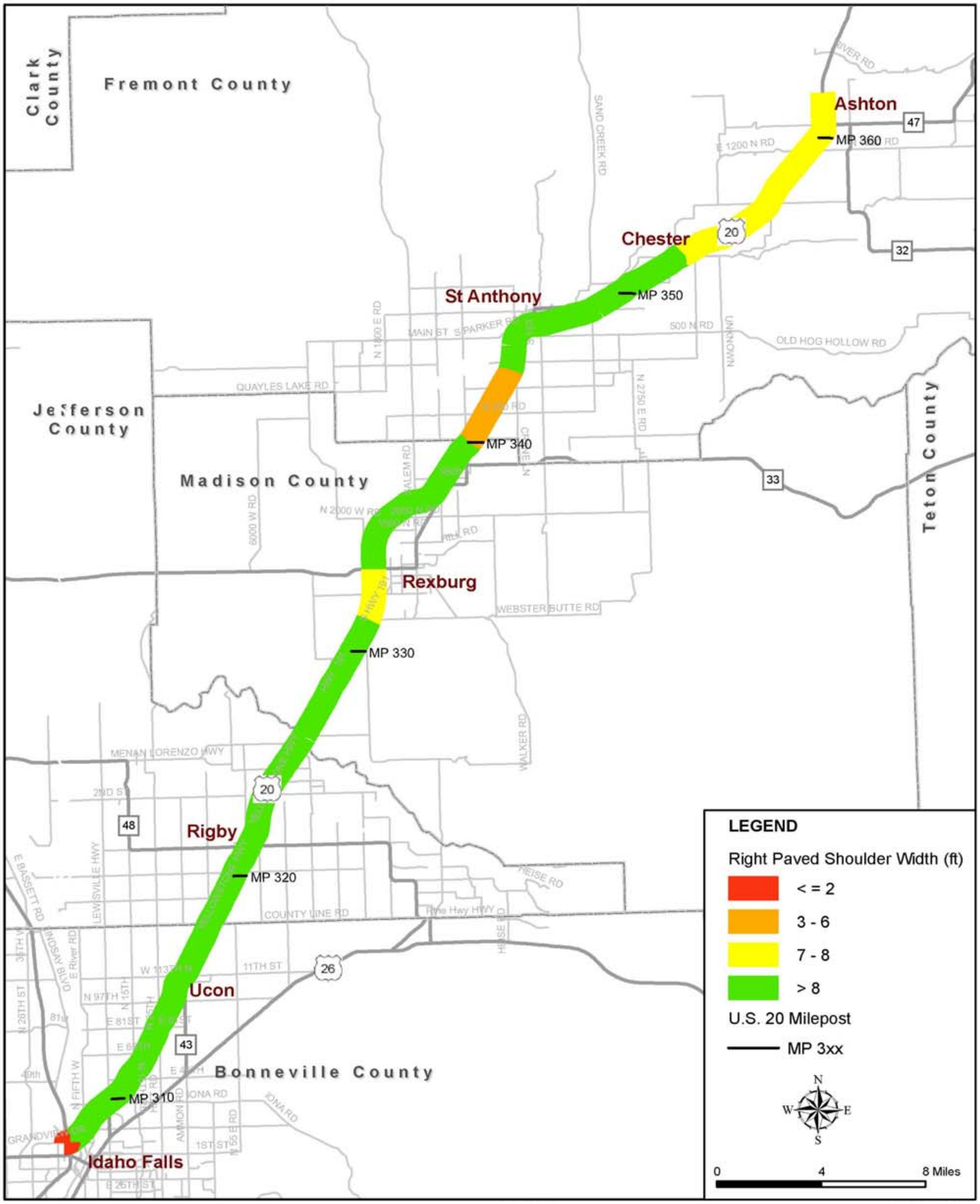
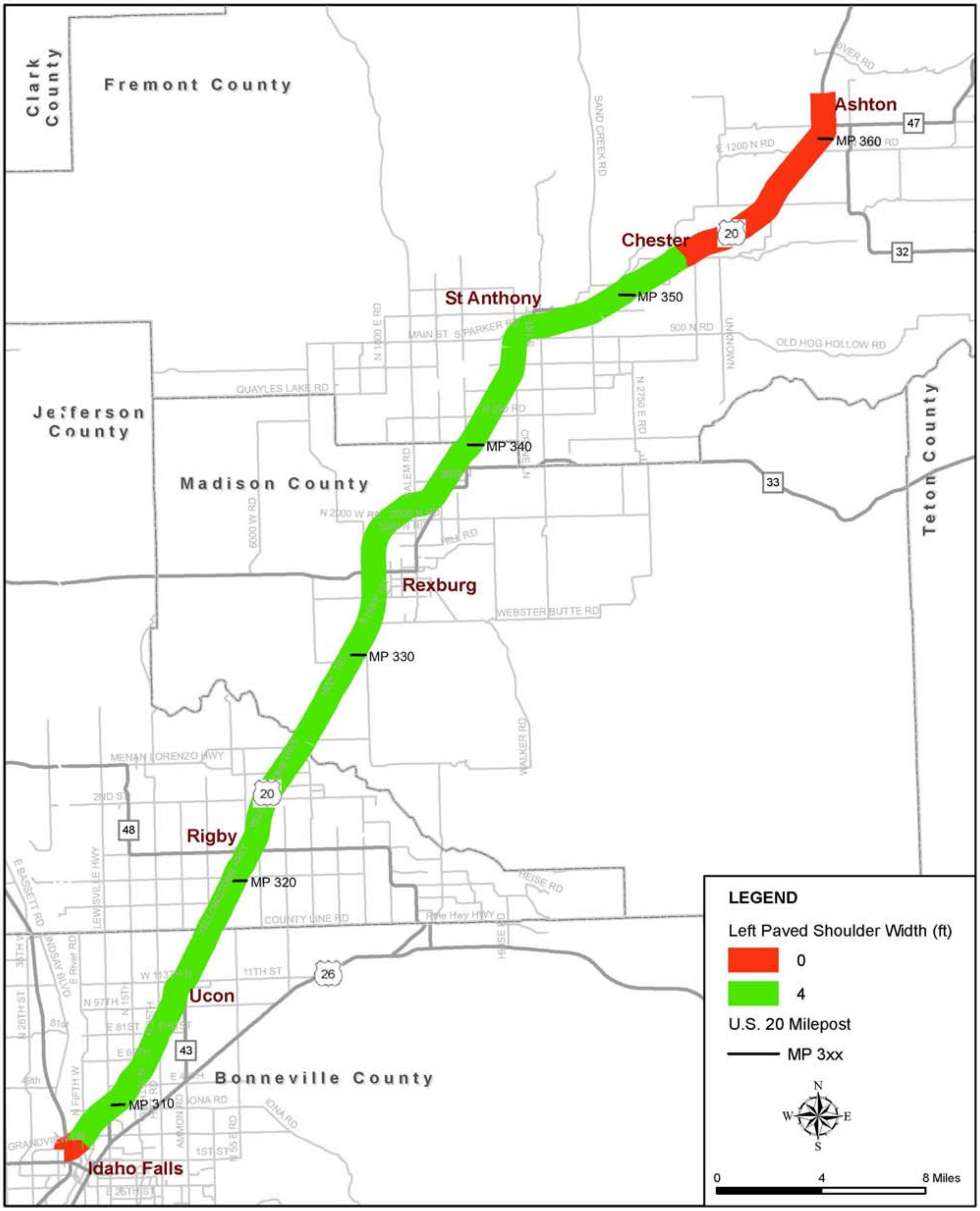


Figure 12 – Existing Left-Hand Paved Shoulder Width



3.6 Points of Access

According to ITD's State Highway Access Control Policy, spacing between at-grade intersections or signals along principal arterials should be at least one mile in rural areas and at least 0.5 mile in urban areas. **Table 10** summarizes ITD's access control criteria. Locations of existing interchanges and at-grade intersections and along the US 20 study corridor have been identified based on both aerial photos and ITD's roadway intersection database. **Table 11** summarizes the number of existing access points along the corridor by segment and compares the number to the standards for access. Although the standards are designed to guide decision making about new points of access, they also provide an indication of the degree to which existing access points in a corridor are consistent with the guidelines. If the existing number of access points exceeds the guidelines, it might indicate a higher than desirable level of conflict from entering, exiting or crossing traffic. Only Section 4B (Sugar City) exceeded the guidelines. In that section, the average spacing of access is 0.8 miles and the guideline for a rural 4-lane principal arterial is 1.0 mile. Other segments where the existing spacing is close to the guidelines are Segment 1A (Idaho Falls) and Segment 7 (Chester to the Ashton Hill Bridge). Particular attention should be given to access management in these three segments as growth in the corridor continues and the desire for more access points increases.

Table 10 – ITD's State Highway Access Control Policy

Roadway Type	Rural/ Urban	Intersection Type	Approaches		Signals	Frontage Road
			Intersection Spacing	Approach Spacing	Signal Spacing	
Principal Arterials	R	At-grade or Interchange	0.5 mile (0.8 km)	1,000 feet (0.3 km)	0.5 mile (0.8 km)	0.25 mile (0.4 km))
	U	At-grade or Interchange	0.25 mile (0.4 km)	300 feet (91.4 m)	0.5 mile (0.8 km)	0.25 mile (0.4 km))
Principal Arterials (Multiple - Lane) *	R	At-grade or Interchange	1 mile (1.6 km)	NA	1 mile (1.6 km)	0.25 mile (0.4 km)
	U	At-grade or Interchange	0.5 mile (0.8 km)	NA	0.5 mile (0.8 km)	0.25 mile (0.4 km))

Note: * Multiple-lane implies two or more thru lanes in the same direction of travel.

Table 11 Interchanges and Existing At-grade Intersections Along US 20 Study Corridor

Segment	Area	ITD State Highway Access Control Standard: Access Type	ITD State Highway Access Control Standard: Minimum Intersection Spacing (Miles)	No. of Interchanges	No. of At-Grade Intersections	Average Intersection Spacing [2] (Miles)	Consistent with Criteria
1A	Idaho Falls	Urban Principal Arterial (multiple-lane) [1]	0.5	4	0	0.6	Yes
1B	Idaho Falls - Ucon	Rural Principal Arterial (multiple-lane) [1]	1.0	3	0	1.5	Yes
2	Ucon - Rigby	Rural Principal Arterial (multiple-lane) [1]	1.0	4	0	1.9	Yes
3	Rigby - Rexburg	Rural Principal Arterial (multiple-lane) [1]	1.0	0	7	1.3	Yes
4A	Rexburg	Urban Principal Arterial (multiple-lane) [1]	0.5	2	0	2.7	Yes
4B	Sugar City	Rural Principal Arterial (multiple-lane) [1]	1.0	3	1	0.8	**No**
5	St. Anthony	Rural Principal Arterial (multiple-lane) [1]	1.0	1	3	1.9	Yes
6	St Anthony - Chester	Rural Principal Arterial (multiple-lane) [1]	1.0	0	4	1.2	Yes
7	Chester - Ashton	Rural Principal Arterial	0.5	0	15	0.6	Yes

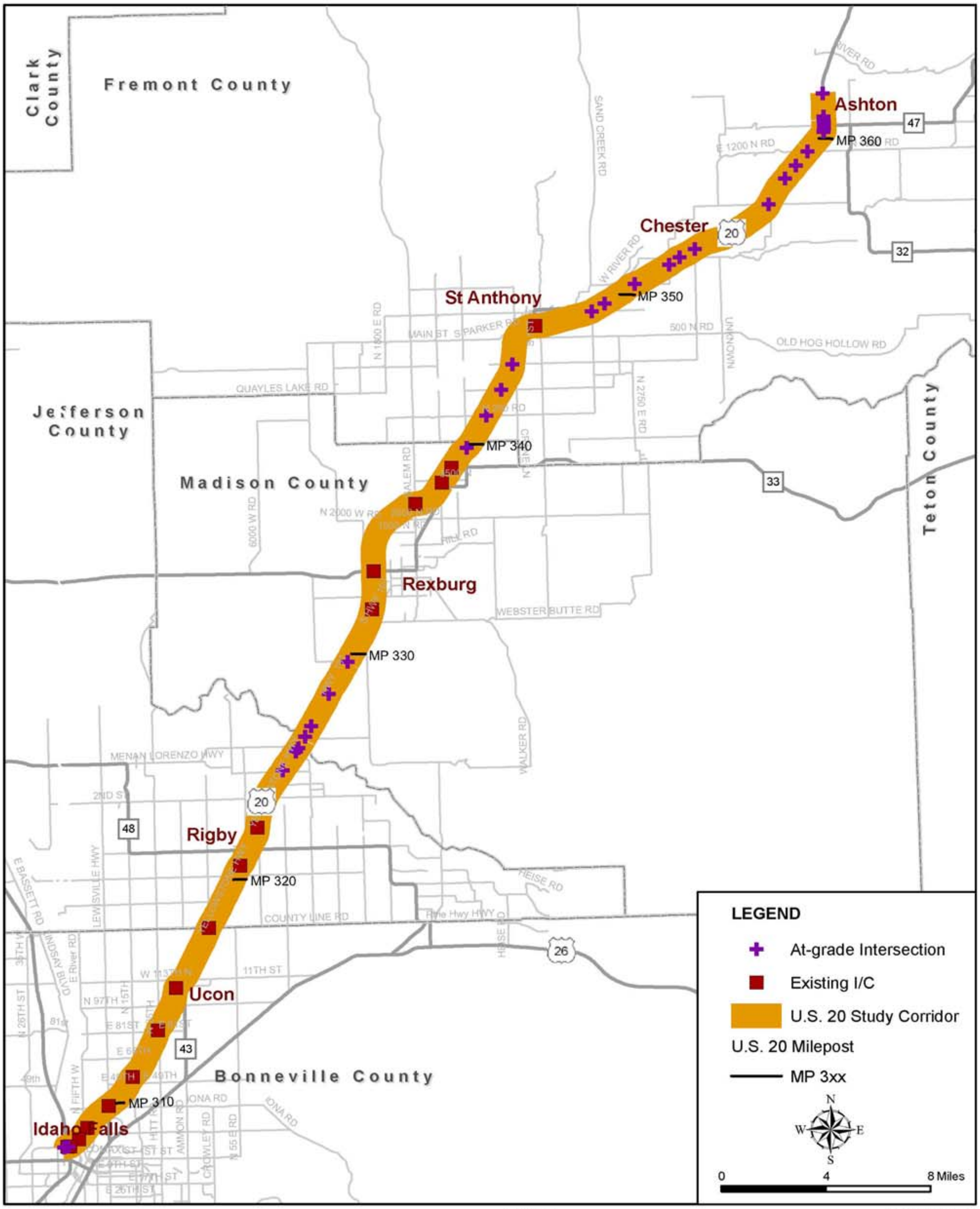
Notes:
1. * Multiple-lane implies two or more thru lanes in the same direction of travel.
2. Both grade-separated interchanges and at-grade intersections are included.

Figure 13 graphically displays the locations of the listed interchanges and at-grade intersections. There are currently forty-five points of access along the corridor. Two new interchanges are planned for US 20. A new interchange at the Menan Lorenzo Highway is funded. A new interchange at Thornton Road is planned but not yet funded. When the two interchanges are completed, seven at-grade intersections will ultimately be eliminated. Only three will be eliminated directly as a result of the Menan Lorenzo Highway interchange.

3.7 Needs for Improvement

The findings of the DKS analysis suggest that there have been some improvements in safety and level of service, and they are probably the result of the plan elements that have been implemented since 2000. The re-assessment of the existing conditions does not reveal new needs or deficiencies that are not already addressed by the plan. Similarly, the forecast of travel and the re-examination of future conditions in a twenty-year horizon did not identify any conditions that would change so significantly as to warrant a change in the future needs of the corridor

Figure 13 – Existing Interchanges and Intersections



4 Summary of Needs and Strategies to Maintain the Corridor Health and Meet the Vision

4.1 Changes from the Initial Plan Recommendations

The re-examination of existing and future conditions conducted by DKS Associates provides no obvious indication that the recommendations of the 2000 Corridor Plan are inappropriate. The 2000 Corridor Plan contained numerous recommendations for how the corridor could be improved with a focus on safety. The most significant set of recommendations related to changes in how access to the roadway was treated. This included recommendations for replacement of at-grade intersections with grade-separated interchanges and eliminating access for many roads in the four-lane, divided portion of US 20. The plan also included recommendations for how access would be maintained through local roadway improvements to provide frontage roads or parallel roads that would link local roads to the grade-separated interchanges. In the two-lane section of the roadway near the northeast end of the corridor, the plan recommended construction of passing lanes and turn lanes at intersections to reduce the conflicts and accidents caused by passing and turning traffic. Other safety-related recommendations in various parts of the corridor included improved lighting, improved signage, providing adequate shoulder width and improved pavement quality. The plan also included a recommendation for changing how rumble strips are placed on the roadway to allow more comfortable use of the paved shoulders by bicyclists while still maintaining the improvement in safety provided by the rumble strips.

The work performed by DKS suggests that the recommendations of the plan will improve the safety of the roadway and provide better level of service and travel-time reliability as growth continues in the corridor. The recommended improvements that have not yet been implemented represent a major investment. While they will almost certainly be valuable and cost-effective over time as urbanization of the corridor continues, the timing for the improvements will vary over the corridor. DKS has used the new forecasts of volume and traffic conditions for the corridor to help determine the appropriate timing of needs. As the need emerges for improvements such as new interchanges and closure of roads that now have direct access to US 20, additional detailed analysis will be required to define the appropriate design details of the improvement. Such decisions should be made with more information about travel patterns and the interaction of traffic volumes on the network of streets and roadways in the corridor.

The discussion below describes the results of the DKS analysis and how they relate to each of the proposed plan elements.

Element 1 from 2000 Corridor Plan: Eliminate grade-separated intersections on the four-lane, divided portion of the corridor

a. Consolidate roadways into fewer points of access
b. Eliminate turning movements other than right turns at at-grade intersections as an interim measure
c. Replace the at-grade intersections that are to remain as access points with grade-separated interchanges over time

d. Build a new bridge over the Snake River to incorporate the Lyman Road connection into a new interchange (this was dropped from the project design)
e. Develop parallel roads or frontage roads to carry local traffic to the roads with interchanges

The DKS analysis of existing and future conditions suggests that the conditions that generated these recommendations continue to exist and the future growth in the corridor will increase the value of the recommended projects. Our analysis of population and employment growth and its effect on the nature of the corridor suggests that the corridor is becoming a more urban corridor with more commuting between various points along the corridor. As a result, peak-period travel time will be an important economic factor in the future because it will affect access to jobs to a greater extent. The corridor is in transition from one that has had travel peaks primarily related to recreational travel in the summer to one that has daily peaks from commuter travel. As the urbanization of the corridor continues, the importance of the daily commute peaks will become increasingly more important as the determinant of need in the corridor. The daily peaking from commute travel and the congestion that will ultimately occur will affect the time and cost to residents for commuting which will ultimately affect the businesses that have to attract employees and compensate them appropriately. Daily peak-hour congestion will also affect the time and cost required to move goods in the corridor which will also add to the cost of doing business. The package of proposed improvements that are designed to make the four-lane section of US 20 completely limited access with only grade-separated interchanges will provide a more reliable and safe commute corridor.

The DKS analysis indicates that traffic volumes have increased significantly since the plan for the corridor was first developed. Between 1998 and 2006 the total number of vehicle miles traveled on an average weekday has increase roughly 33 percent, but in some locations near Rexburg volumes have almost doubled. This change in volume has not yet led to a significant change in link level of service on an average annual weekday, but there are serious level-of-service problems at at-grade intersections. Forecasts of traffic volume indicate that the problem will get worse with additional growth. The DKS forecasts for 2027 are somewhat higher than the original forecasts for 2020 but this is primarily in the fast-growing areas near Rexburg. The forecasts suggest that the level of service at at-grade intersections would deteriorate further.

Although the accident rate is not high by statewide standards, the segments that are higher than average or near the statewide average for fatal or injury accidents are ones with at-grade intersections. As the volumes on US 20 and on the crossing streets increase as a result of growth and development, the potential for conflict from crossing traffic will increase. The need for the elimination of at least the crossing movements and potentially the at-grade access points will provide a safety benefit.

The DKS analysis indicates that the accident rates have improved somewhat since the 2000 Corridor Plan was developed. This may be the result of the interchange projects on US 20 that eliminated at-grade intersections from the Lewisville Interchange to the Ucon Interchange (Telford Road, St. Leon Road, Tower Road and Hitt Road), at Grant Road, at Coltman Road, At Holbrook Road, at Sugar-Salem Road and at SR 33.

Element 2 from 2000 Corridor Plan: Access management that would prevent any additional direct access to US 20

Growth in the corridor will increase the pressure for additional public and private access to US 20 and to the interchanges. Preventing additional direct access will be important for maintenance of safe travel conditions and to maintain the level of service on US 20.

Element 3 from 2000 Corridor Plan: Add two-miles of passing lanes on the two-lane undivided segment

The mix of vehicles that is introduced because the corridor is also a major route for recreational travel, for farm-related transportation and for intercity freight and goods movement will maintain the conflict that arises because of different sized vehicle traveling at different speeds. The mix of vehicles will continue to be a concern, but particularly in the northern end of the corridor where the US 20 is mostly two lanes and not divided. The increase in the volume of traffic will result in more drivers wanting to pass slow-moving vehicles, but fewer gaps in which to do so. The need for passing lanes will increase with the increase in traffic volume. The DKS forecasts for the two-lane section of US 20 support the need for passing-lanes, turning lanes at at-grade intersections, reduction in the number of access points and intersection traffic control at the remaining higher-volume at-grade intersections. Although DKS recommends the addition of passing lanes, the exactly location and length of the lanes cannot be determined without further analysis Neither the 2000 Corridor Plan nor the DKS analysis specifically link the need for the improvements to the accident rate on the segment or the nature of specific accidents, but the improvements do seem appropriate for a two-lane rural roadway with volumes in the range predicted for 2027 (4400 to 7200 AADT and 8000 to 14,000 peak season daily volume). The reassessment of existing and forecasted future conditions does not indicate the need for widening of the roadway to four lanes.

Element 4 from 2000 Corridor Plan: Provide night-time lighting of at-grade intersections

Based on existing conditions, intersection lighting is not recommended as it was in the 2000 Corridor Plan because none of the intersections along the corridor are high-accident locations and all have relatively low crossroad volumes. Partial or complete lighting should be considered at all interchanges along the corridor, however.

Element 5 from 2000 Corridor Plan: Signage on the four-lane segments should meet interstate standards

The signage along the 4-lane segments of the corridor generally meets interstate standards due to improvements that have been implemented since the 2000 Corridor Plan was completed. Recent federal regulation requires that all roadway signing have a minimum retroreflectivity rating and this may lead to a replacement of some of the existing signing over time. Other signing needs are:

- Advance signing is needed at intersections. At most intersections, this signing does not exist or is inadequate. Advance signing could also be used for private accesses where warranted based on turn volumes.
- Some signs, particularly secondary guide signs, are too small. The size of the signs should comply with the MUTCD guidelines for expressway signing.
- Crossroad signs could be added to the top of stop signs at intersections.

Element 6 from 2000 Corridor Plan: Provide adequate shoulder widths to meet AASHTO standards

Because of the multi-use nature of the corridor – commuting, school trips, recreation, tourism, farm transportation and freight movement - having adequate shoulders to accommodate non-motorized travel and to allow for stopping without impeding the travel lanes remains a valid safety concern. No detailed analysis of accident history or use patterns has supported the widening of roadway shoulders in the corridors.

Element 7 from 2000 Corridor Plan: Maintain pavement quality

The DKS analysis indicates that while there has been improvement in segments where pavement projects addressed poor or very poor conditions; the overall pavement quality has gotten worse and the recommendation for increased pavement maintenance is still warranted.

Element 8 from 2000 Corridor Plan: Reconfigure rumble strips on the shoulders to provide a better opportunity for bicycling

The 2000 Corridor Plan recommended that the existing rumble strip configuration be changed from strips that extend across the entire shoulder at 30' intervals to strips that run parallel to the highway. This would provide bicyclists with a more comfortable ride and provide motorists with continuous rather than intermittent warning. This change has been implemented along certain sections of the corridor, but not others. It is recommended that this be done along the entire corridor.

4.2 Timing for Recommended Improvements

The needs and deficiencies that are the basis of the recommended improvements will emerge at different points in time over the next twenty years in the different segments of the corridor. Some of the needs and deficiencies have been identified in the existing conditions and the recommended improvements should be considered immediately. Many of the roadway improvement projects from the 2000 Corridor Plan for US 20 have been included in ITD's FY 2007 – 2011 State Transportation Improvement Program (STIP) and the Bonneville Metropolitan Planning Organization's FY 2007 – 2011 Transportation Improvement Program (TIP). These committed and planned roadway improvement projects are summarized in Table 12

Others needs are identified in the analysis for 2027 and so they are expected to emerge at some point over the next twenty years. DKS has examined the timing of needs and deficiencies in each segment by estimating the amount of growth in traffic at different points in the twenty-year time frame. Based on this analysis a figure identifying the timing of each category of improvement has been prepared for each segment. The color-coded bars within the figures indicate the level of need for the overall segment; needs for specific locations are described within the text. A brief description of the results for each segment is provided in the sections that follow.

Table 12 – Committed and Planned Roadway Improvements

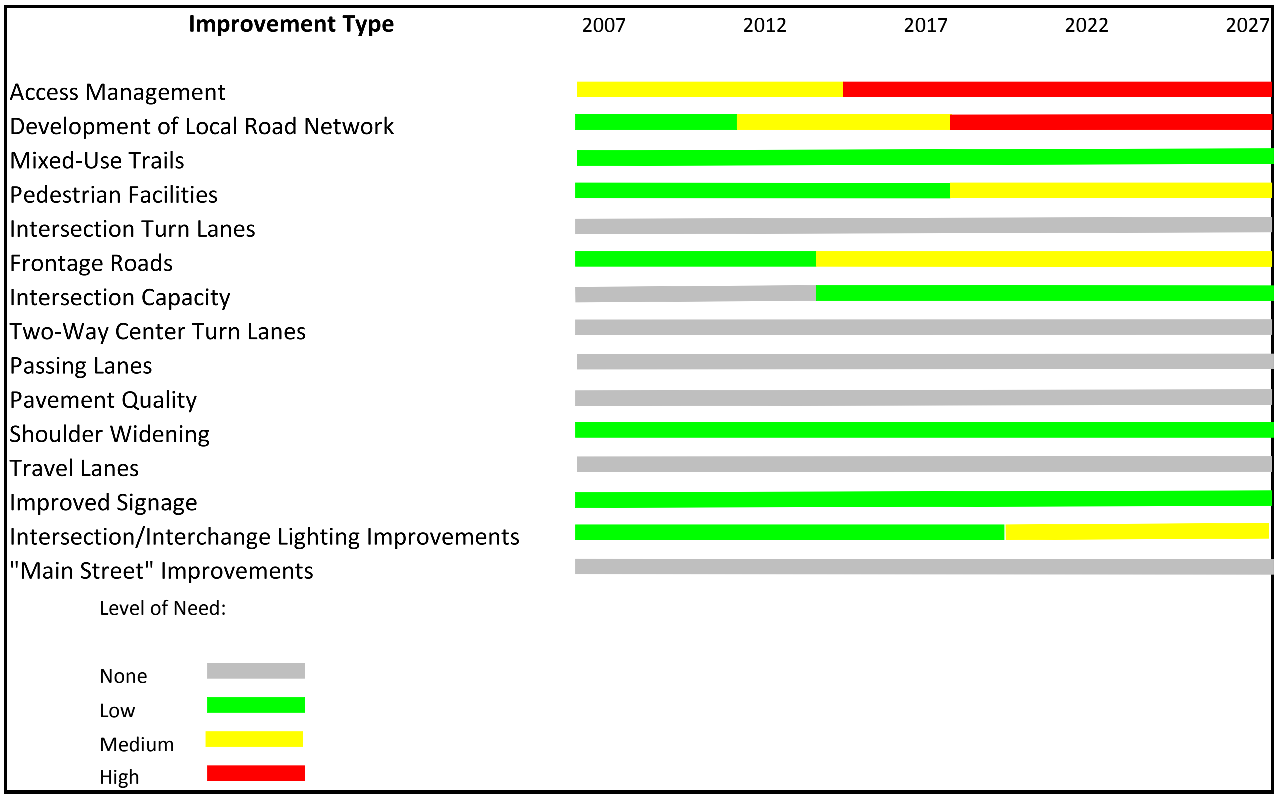
Project Location	Improvements
Ucon Interchange, South Rexburg Interchange, Rexburg Interchange and North Rexburg	Install lighting based on urban lighting standards
Menan-Lorenzo Interchange MP 325.99	Interchange Construction. As part of the project, intersections at 600 N, 680 N and 700 N would be closed; also, Ellis Road will be grade separated.
Thornton Interchange	Interchange Construction. As part of the project, intersections at 6800 S, 4300 W, 3800 S and field approach south of Thornton would be closed. Also, Road to boat ramp would be constructed.
Idaho Falls MP 307.45 – 307.695	Pavement Resurfacing and Adding Lanes
Idaho Falls North MP 307.695 – 310.635	Pavement Resurfacing
Idaho Canal/Snake River Dry Bed Canal MP 310.172 – 323.58	Bridge Rehabilitation
Rigby, North and South MP 320.088 – 327.64	Pavement Reconstruction
Rexburg, South and North MP 327.64 – 331.427, 333.435 – 336.859	Pavement Resurfacing
Rexburg MP 331.427 – 333.435	Pavement Resurfacing and Adding Lanes
Sugar City, North and South MP 336.859 – 340.08	Pavement Reconstruction
St. Anthony South MP 340.08 – 343.35	Pavement Resurfacing and Shoulder Improvement
St. Anthony, South and North MP 343.35 – 345.357, 345.833 – 348.082	Pavement Reconstruction
St. Anthony MP 345.357 – 345.833	Pavement Resurfacing
St. Anthony Business Loop MP 347.851	Turning and Deceleration Lanes Treatments
Ashton, South MP 352.938 – 361.063	Pavement Resurfacing
Ashton, North MP 361.063 – 363.5	Adding Lanes
Madison County Line to Eastbound off Ramp	Pavement Reconstruction and Roadway Realignment
Ashton	Intersection Improvements
US 20 Corridor in District 6 MP 307.58 – 363.37	Sign Upgrades

Sources: Idaho FY 08-2012 State Transportation Improvement Program (STIP); Idaho' FY 2008 Long Range Capital Improvement Process (LRCIP); District 6 Needs Report; Idaho Highway Needs Report.

4.2.1 Segment 1A (MP 307.5 to MP 309.9) – I-15 to Lewisville Hwy.

As indicated in **Figure 14**, the greatest needs for improvements in Segment 1A are for **Access Management** and **Development of Local Road Network**, both of which will be high priority by the middle of the planning horizon. **Pedestrian Facilities**, **Frontage Roads**, and **Intersection/Interchange Lighting** will be medium priority by the middle of the planning horizon. **Mixed-Use Trail**, **Intersection Capacity, Shoulder Widening,** and **Improved Signage** will remain low priority throughout the planning horizon.

Figure 14 – Expected Timing of Recommended Improvements for Segment 1A of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

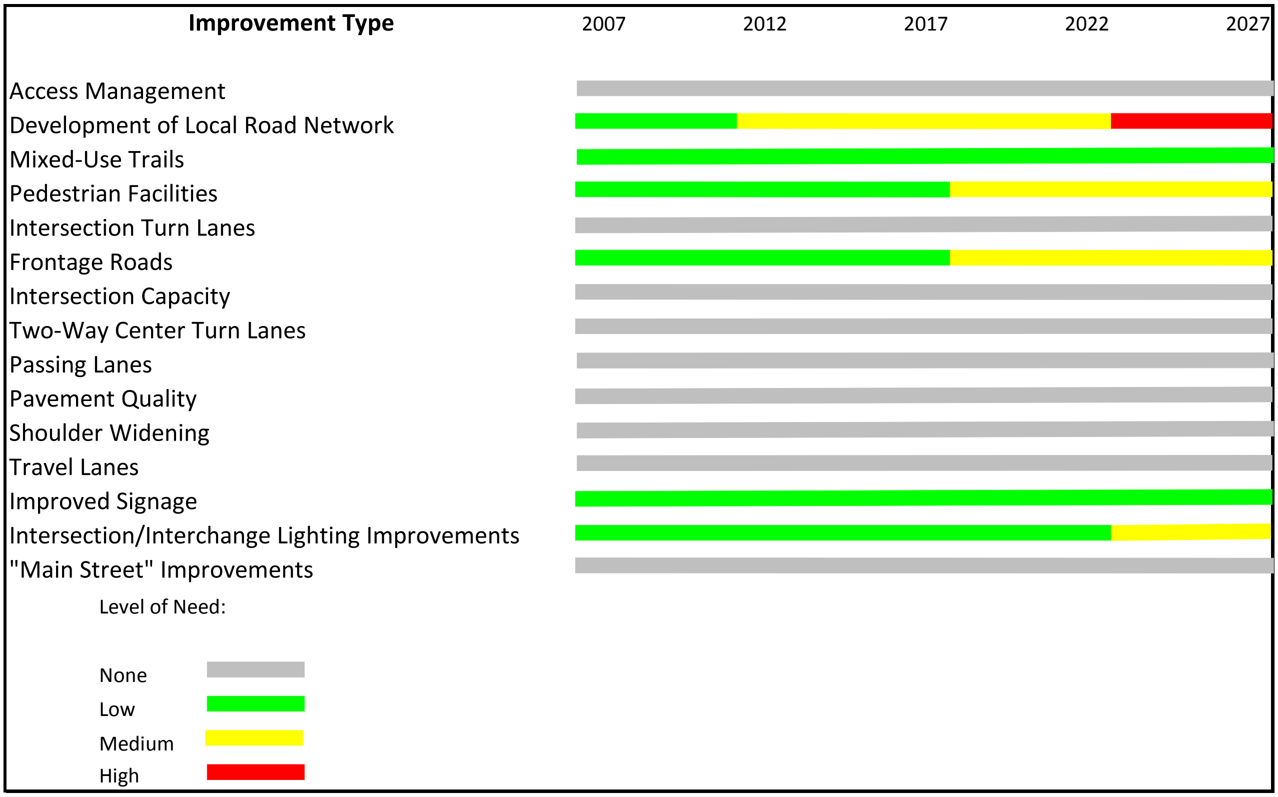
- **Access Management** – This part of US 20 is a 4-lane divided highway with no private accesses. There are four interchanges along this segment. ITD's access spacing standard of 0.5 miles between interchanges for urban principal arterials is not met for three of the interchanges. Closure of any of these interchanges to meet the standard would likely be impractical in the short-term, however, due to the importance of these connections to the local road network. A longer-range solution involving closure of one or more of these interchanges must be identified, however, since volumes will range from 40,000 - 50,000 vehicles per day by 2027 The 2000 Corridor Plan recommended that bypass should be constructed to the west of US 20 to reduce future traffic volumes along this segment. This is not recommended, however, due to the high cost and high environmental and land use impacts associated with this alternative.

- **Development of Local Road Network** – There are two areas of potential need: 1) Modification of the existing local network between the Snake River Bridge and Science Dr. to accommodate the eventual closure or modification of the Lindsay Blvd., Riverside Dr., and/or Science Dr. interchanges (see Access Management regarding access spacing need); and 2) Development of a supporting local network in the area between the Science Dr. and Lewisville interchanges as development occurs. Currently this area is relatively underdeveloped with a sparse local network.
- **Mixed-Use Trails** – Depending on the character of future development within this segment, there may be some need for mixed-use trails for recreational or bicycle commuting purposes.
- **Pedestrian Facilities (Sidewalks and Crosswalks)** – The need for pedestrian facilities will primarily be in areas of new or existing development within the corridor area. Pedestrian facilities immediately adjacent to highway are inappropriate due to the high speed and volume of traffic.
- **Intersection Turn Lanes** – The only intersections within this segment are at the ramp terminals of the I-15 interchange. Turn lanes already exist at these locations.
- **Frontage Roads** – Frontage roads may be needed depending on how the interchange spacing problem is resolved (see Access Management). Frontage roads may also be required as part of the local road network serving new development in area between the Science Dr. and Lewisville interchanges.
- **Intersection Capacity** – The only intersections within this segment are at the ramp terminals of the I-15 interchange. A signal already exists at the northbound intersection and a signal will likely be needed at the southbound intersection within the near-term.
- **Two-Way Center Turn Lanes** - Within this segment, US 20 is divided with raised or grassy medians and no intersections or private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – Only a very small section of this segment has poor pavement condition; the "no need" rating assumes that the existing adequate pavement condition will be maintained through the planning horizon.
- **Shoulder Widening** – Left-hand shoulder widths do not meet the AASHTO standard of 4' or greater over a 0.5 mile section between the I-15 and Science Dr. interchanges.
- **Additional Travel Lanes** – There are no existing or future needs. Levels of service are "C" or better.
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.2 Segment 1B (MP 309.9 to MP 314.5) – Lewisville Hwy. to Fairview Rd.

As indicated in **Figure 15**, the greatest needs for improvements in Segment 1B are for **Development of Local Road Network** which will be medium priority by the middle of the planning horizon and become high priority by the end. **Pedestrian Facilities**, **Frontage Roads**, and **Intersection/Interchange Lighting** will be medium priority by the middle or end of the planning horizon. **Mixed-Use Trail** and **Improved Signage** will remain low priority throughout the planning horizon.

Figure 15 – Expected Timing of Recommended Improvements for Segment 1B of US 20.



A description of the rationale for rating of need for each of the categories of improvements is provided below.

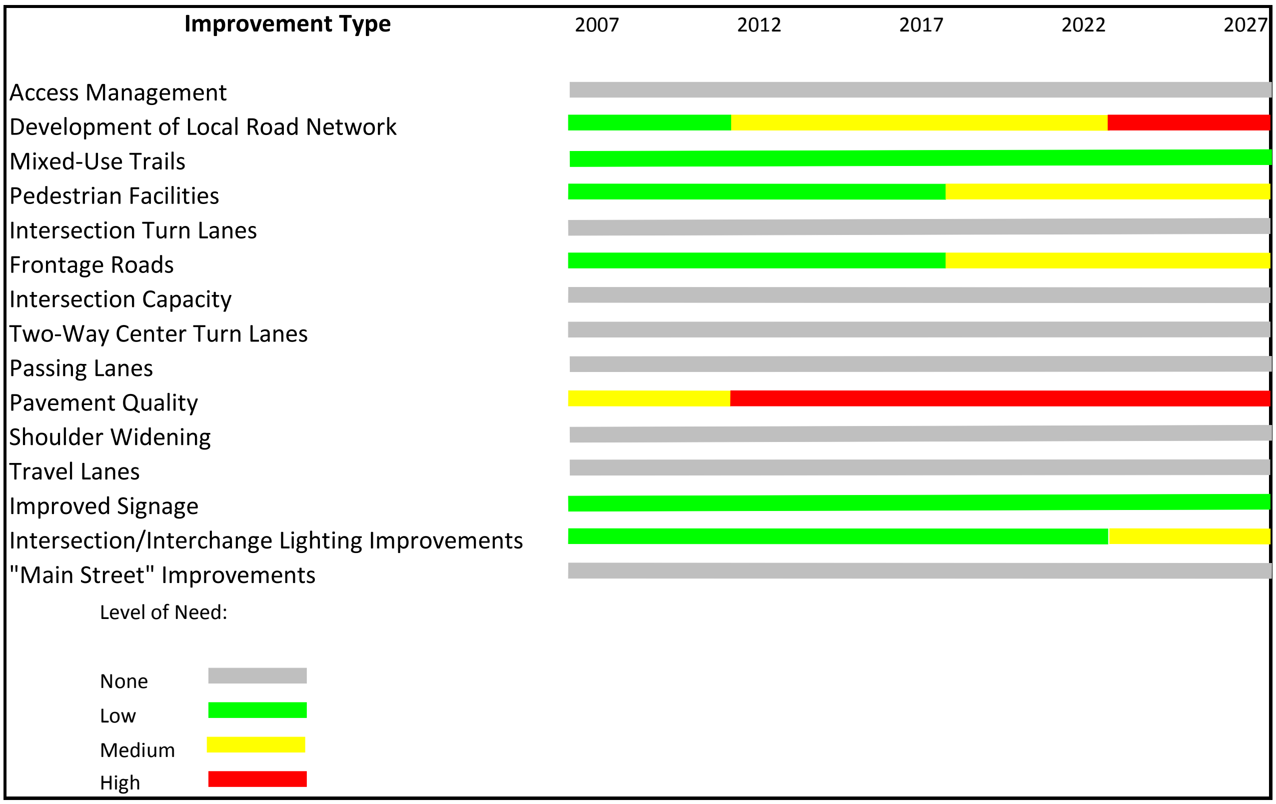
- **Access Management** – This part of US 20 is a 4-lane divided highway with no private accesses. There are three interchanges along this segment. ITD's access spacing standard of 1 mile between interchanges for rural principal arterials is met. All of the access improvement recommendations from the 2000 Corridor Plan have been implemented.
- **Development of Local Road Network** – This segment lies within an area between Idaho Falls and Ucon that is transitioning from rural to urban. Additional local road network will be needed as this area continues to develop.
- **Mixed-Use Trails** – Depending on the character of future development in this segment, there may be some need for mixed-use trails for recreational or bicycle commuting purposes.

- **Pedestrian Facilities (Sidewalks and Crosswalks)** – The need for pedestrian facilities will primarily be in areas of new or existing development within the corridor area. Pedestrian facilities immediately adjacent to highway are inappropriate due to the high speed and volume of traffic.
- **Intersection Turn Lanes** – There are no intersections within this segment.
- **Frontage Roads** – Frontage roads may be needed as part of the local road network serving new development in this area.
- **Intersection Capacity** – There are no intersections within this segment.
- **Two-Way Center Turn Lanes -** Within this segment, US 20 is divided with a grassy median and no intersections or private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – There are no existing pavement needs; the "no need" rating assumes that the existing adequate pavement condition will be maintained through the planning horizon.
- **Shoulder Widening** – There are no shoulder width needs.
- **Additional Travel Lanes** – There are no existing or future needs. The existing LOS is "A" and the future (2027) LOS is "B".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.3 Segment 2 (MP 314.5 to 322.3) – Fairview Rd. to N. Rigby Interchange

As indicated in **Figure 16**, the greatest needs for improvements in Segment 2 are for **Development of Local Road Network** and **Pavement Quality** which will both become high priority during the planning horizon. **Pedestrian Facilities**, **Frontage Roads**, and **Intersection/Interchange Lighting** will be medium priority by the middle or end of the planning horizon. **Mixed-Use Trail** and **Improved Signage** will remain low priority throughout the planning horizon.

Figure 16 – Expected Timing of Recommended Improvements for Segment 2 of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

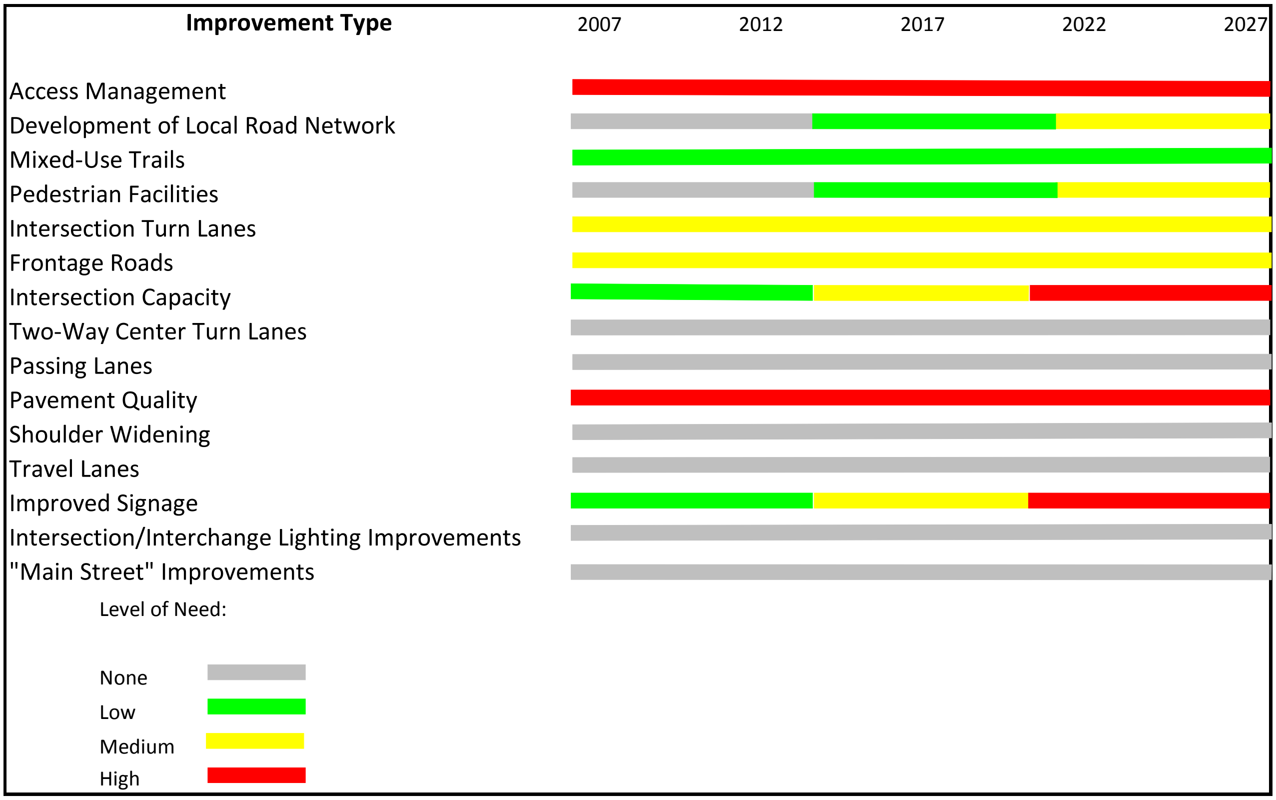
- **Access Management** – This part of US 20 is a 4-lane divided highway with no private accesses. There are four interchanges along this segment. ITD's access spacing standard of 1 mile between interchanges for rural principal arterials is met. All access improvement recommendations from the 2000 Corridor Plan have been implemented, with the exception of the modification of the S. Rigby interchange from a half interchange to a full interchange.
- **Development of Local Road Network** – The corridor area within the portion of this segment between Ucon and Rigby is transitioning from rural to urban. Additional local road network will be needed as this area continues to develop.
- **Mixed-Use Trails** – Depending on character of future development in this segment, there may be some need for mixed-use trails for recreational or bicycle commuting purposes.

- **Pedestrian Facilities (Sidewalks and Crosswalks)** – The need for pedestrian facilities will primarily be in areas of new or existing development within the corridor area. Pedestrian facilities immediately adjacent to highway are inappropriate due to the high speed and volume of traffic.
- **Intersection Turn Lanes** – There are no intersections within this segment.
- **Frontage Roads** – Frontage roads may be needed as part of the local road network serving new development in this area. The N. Yellowstone Highway currently serves this function on east side of highway between Ucon and Rigby; there is no existing frontage road on the west side of the highway.
- **Intersection Capacity** – There are no intersections within this segment.
- **Two-Way Center Turn Lanes** - Within this segment, US 20 is divided with a grassy median and no intersections or private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – The pavement is in "poor" or "very poor" condition along roughly 50% of the segment; this need will become more serious as traffic volumes increase. (This need may be addressed in 2008 – a pavement reconstruction and resurfacing project is scheduled in the 2007 - 2011 STIP).
- **Shoulder Widening** – There are no shoulder width needs.
- **Additional Travel Lanes** – There are no existing or future needs. The existing and future (2027) LOS is "B".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.4 Segment 3 (MP 322.3 to MP 331.4) – N. Rigby Interchange to Rexburg S. Urban Limits

As indicated in **Figure 17**, the greatest needs for improvements in Segment 3 are for **Access Management** and **Pavement Quality**, both of which will be high priority throughout the planning horizon. **Intersection Capacity** and **Improved Signage** are low priority now but will be high priority by the end of the planning horizon. **Intersection Turn Lanes** and **Frontage Roads** will be medium priority throughout the planning horizon. **Development of Local Road Network** and **Pedestrian Facilities** will emerges as medium priority in the last portion of the planning horizon. **Mixed-Use Trails** will be a low priority throughout.

Figure 17 – Expected Timing of Recommended Improvements for Segment 3 of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

- **Access Management** – This part of US 20 is a 4-lane divided highway with no interchanges. There are eight intersections along this segment, including one farm access road (M.P. 327.42). ITD's access spacing standard of 1 mile between intersections for rural principal arterials is not met between seven of the intersections. None of the recommended access improvements from the 2000 Corridor Plan have been implemented. The Menan-Lorenzo interchange improvement, scheduled for completion in 2009, will result in closure of three intersections at E. 600 N Rd., E. 680 N Rd., and E. 700 N Rd. (Menan-Lorenzo Hwy.). It is recommended that the other access improvements from the

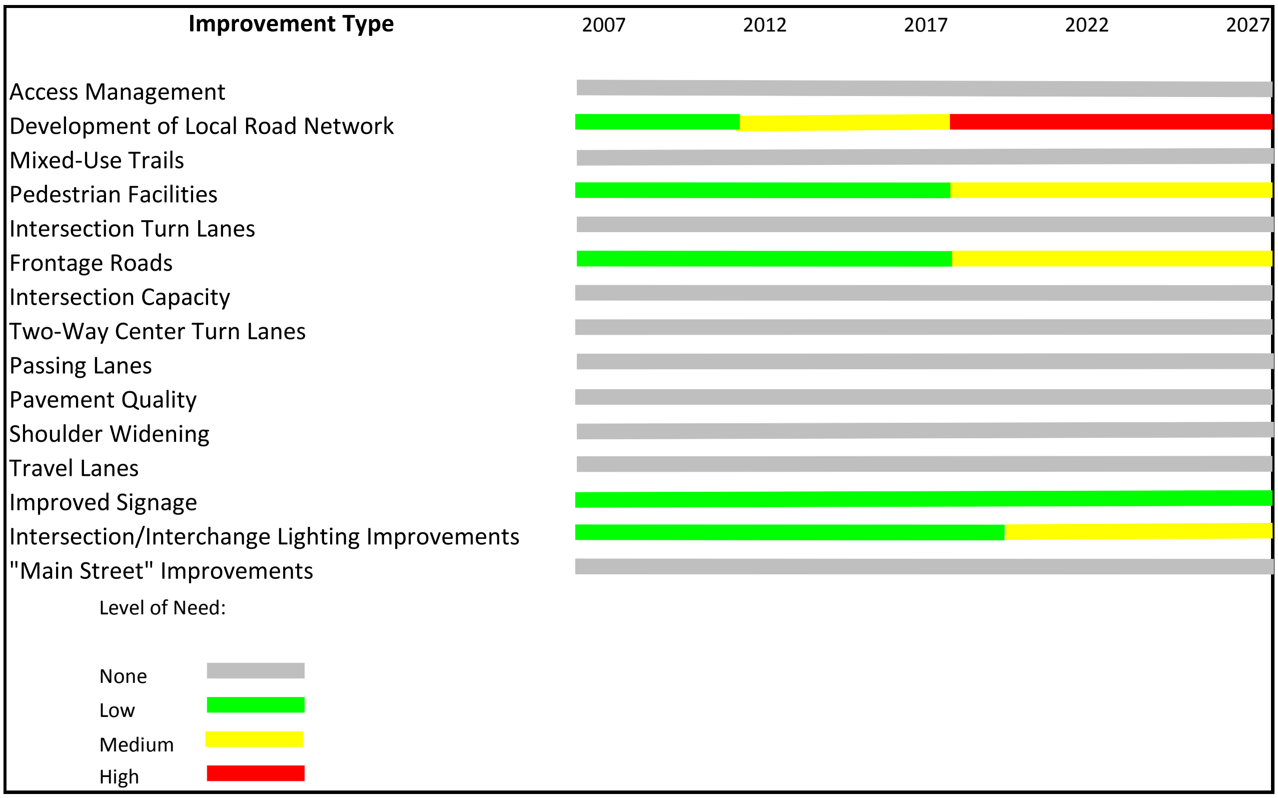
2000 Corridor Plan for 4300 W Rd. (intersection closure), Thornton Rd. (full interchange), and Burton Rd. (intersection closure) be implemented within the near-term (0 - 5 years).

- **Development of Local Road Network** – This segment is largely rural, so there is a minimal existing need for additional local network. There may be some future need on the north and south ends of the segment to support potential development outside of Rigby and Rexburg.
- **Mixed-Use Trails** – Depending on character of future development in this segment, there may be some need for mixed-use trails for recreational or bicycle commuting purposes.
- **Pedestrian Facilities (Sidewalks and Crosswalks)** – Pedestrian facilities immediately adjacent to highway are inappropriate due to high speed and volume of traffic. There may be some future need on the north and south ends of the segment within areas of potential urban development outside of Rigby and Rexburg.
- **Intersection Turn Lanes** – Left-turn lanes exist at all of the intersections except the farm access road. Right-turn lanes are currently warranted at four intersections. Right-turn lanes will be needed at five intersections in the future. The needs at these intersections would be eliminated, however, if the access improvements described above (see Access Management) are implemented.
- **Frontage Roads** – There may be some need for the development of frontage roads associated with the proposed access improvements (see Access Management) and potential development outside of Rigby and Rexburg. The S. Yellowstone Highway serves as a frontage road on the east side of US 20 between Thornton Rd. and the north end of the segment.
- **Intersection Capacity** – Existing LOS is substandard (E-F) at two intersections. Future (2027) LOS will be substandard (E-F) at five intersections. The future LOS deficiencies would be eliminated if the access improvements described above (see Access Management) are implemented.
- **Two-Way Center Turn Lanes** - Within this segment, US 20 is divided with a grassy median and no intersections or private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – The pavement is in "poor" or "very poor" condition along 95% of the segment; this need will become more serious as traffic volumes increase. (Pavement needs along the southern half of this segment may be addressed in 2008 – a pavement reconstruction and resurfacing project is scheduled in the 2007 - 2011 STIP).
- **Shoulder Widening** – There are no shoulder width needs.
- **Additional Travel Lanes** – There are no existing or future needs. The existing LOS is "A-B" and the future (2027) LOS is "C".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.5 Segment 4A (MP 331.4 to MP 336.9) – Rexburg S. Urban Limits to Salem Rd.

As indicated in **Figure 18**, the greatest needs for improvements in Segment 4A are for **Development of Local Road Network** which will become high priority during the planning horizon. **Pedestrian Facilities**, **Frontage Roads**, and **Intersection/Interchange Lighting** will be medium priority by the middle or end of the planning horizon. **Improved Signage** will remain low priority throughout the planning horizon.

Figure 18 – Expected Timing of Recommended Improvements for Segments 4A of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

- **Access Management** – This part of US 20 is a 4-lane divided highway with no intersections or private accesses. There are three interchanges along this segment. ITD's access spacing standard of 1 mile between interchanges for rural principal arterials is met. All access improvement recommendations from the 2000 Corridor Plan have been implemented.
- **Development of Local Road Network** – Rexburg is a rapidly growing urban area, so there will be an increasing need for local network improvements as development occurs, particularly in those areas closest to Rexburg.
- **Mixed-Use Trails** – The overall need is minimal due to the low population outside of Rexburg and lack of recreational activity in area.
- **Pedestrian Facilities (Sidewalks and Crosswalks)** – The need for pedestrian facilities will primarily be in areas of new or existing development within the corridor area.

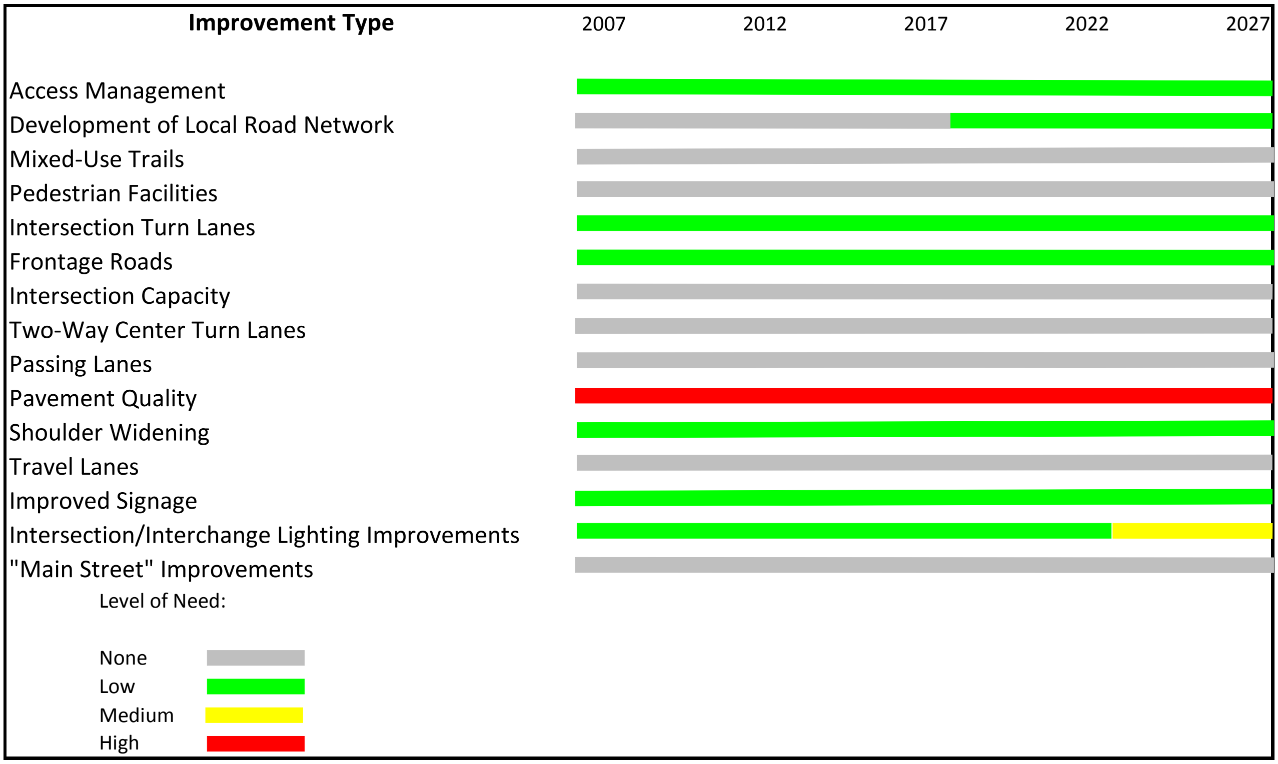
Pedestrian facilities immediately adjacent to highway are inappropriate due to the high speed and volume of traffic.

- **Intersection Turn Lanes** – There are no intersections within this segment.
- **Frontage Roads** – Frontage roads may be needed as part of the local road network serving new development in this area.
- **Intersection Capacity** – There are no intersections within this segment.
- **Two-Way Center Turn Lanes** - Within this segment, US 20 is divided with a grassy median and no intersections or private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – There are no existing pavement needs; the "no need" rating assumes that the existing adequate pavement condition will be maintained through planning horizon.
- **Shoulder Widening** – There are no shoulder width needs.
- **Additional Travel Lanes** – There are no existing or future needs. The existing LOS is "A" and the future (2027) LOS is "B-C".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.6 Segment 4B (MP 336.9 to MP 340.2) – Salem Rd. to N. 2000 E Rd.

As indicated in **Figure 19**, the greatest needs for improvements in Segment 4B are for **Pavement Quality** which will be high priority throughout the planning horizon. **Intersection/Interchange Lighting** will be medium priority by the middle or end of the planning horizon. **Access Management, Intersection Turn Lanes**, **Frontage Roads**, **Shoulder Widening** and **Improved Signage** will be low priority throughout and **Development of Local Road Network** will become a low priority in the second half of the planning horizon.

Figure 19 – Expected Timing of Recommended Improvements for Segment 4B of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

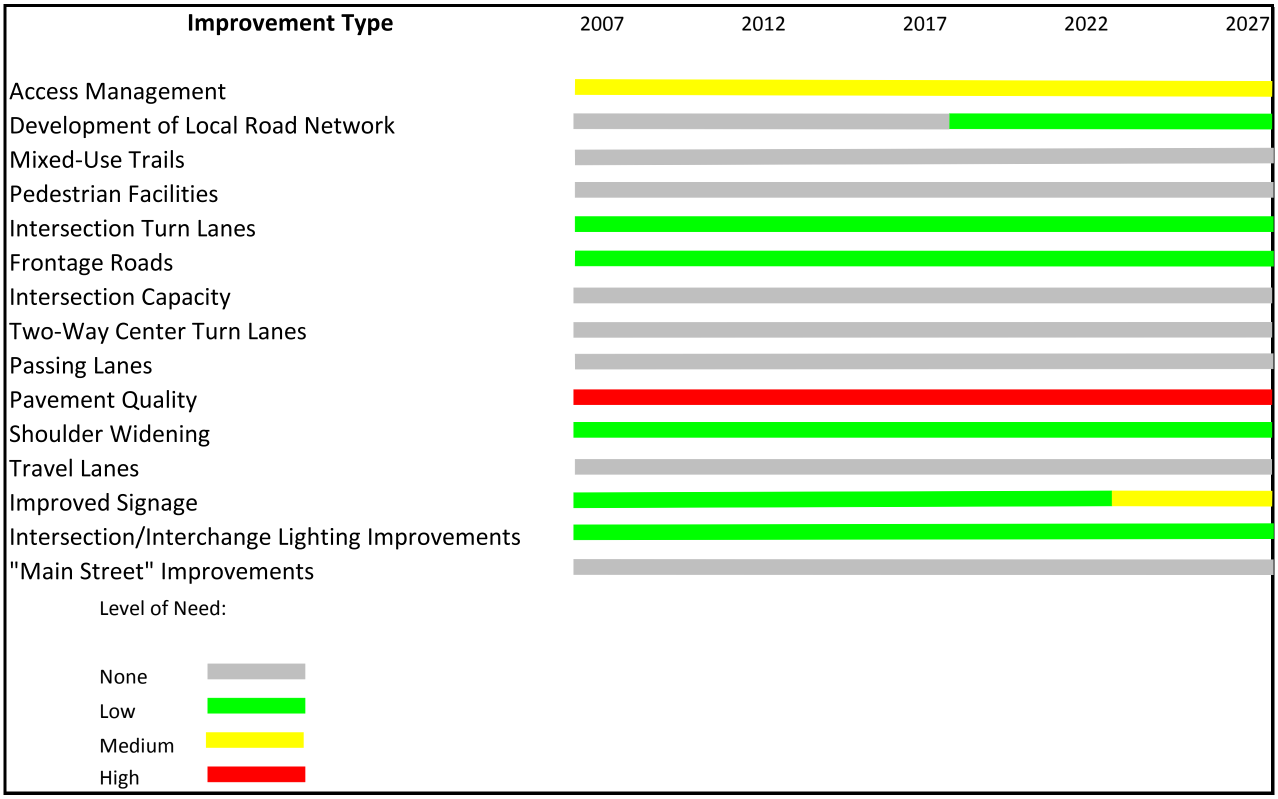
- **Access Management** – This part of US 20 is a 4-lane divided highway with two interchanges, one intersection, and no private accesses. ITD's access spacing standard of 1 mile between interchanges for rural principal arterials is not met. The only access improvement recommended in the 2000 Corridor Plan was to close the N. 2000 E Rd. intersection. This improvement should be implemented within the near-term (0 - 10 years). Because this is the only location with an access management need, the overall level of need for this segment is low.
- **Development of Local Road Network** – This is a largely rural segment with a moderate growth rate; therefore the need for additional local road network will be minimal.
- **Mixed-Use Trails** – There is a minimal need due to the low population and lack of recreational activity in area.

- **Pedestrian Facilities (Sidewalks and Crosswalks)** – There is a minimal need for pedestrian facilities due to the low-density character of the area.
- **Intersection Turn Lanes** – Left-turn lanes exist at the only intersection within this segment (N. 2000 E Rd.). There is a minor existing and future need for a right-turn lane at this location. This need would be eliminated if this intersection is closed - see Access Management.
- **Frontage Roads** – There may be a minor need for frontage roads associated with closure of N. 2000 E Rd. (see Access Management). There are no other needs due to low existing and future development levels adjacent to highway.
- **Intersection Capacity** – There are no existing or future capacity needs at the only intersection within this segment (N. 2000 E Rd.). The existing LOS is "B-C" and the future (2027) LOS is "C".
- **Two-Way Center Turn Lanes** - Within this segment, the highway is divided with a grassy median with only one intersection and no private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – The pavement is in "poor" or "very poor" condition over 95% of segment; this need will become more serious as traffic volumes increase.
- **Shoulder Widening** – The right shoulder widths of 5' are slightly below ITD’s standard along a short section at the north end of the segment (northbound direction only).
- **Additional Travel Lanes** – There are no existing or future needs. The existing and future LOS is "A".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.7 Segment 5 (MP 340.2 to MP 347.9) – N. 2000 E Rd. to N. 2600 E Rd.

As indicated in **Figure 20**, the greatest needs for improvements in Segment 5 are for **Pavement Quality** which will be high priority throughout the planning horizon. **Access Management** will be medium priority throughout. **Improved Signage** will be medium priority by the middle or end of the planning horizon. **Intersection Turn Lanes**, **Frontage Roads**, **Shoulder Widening** and **Intersection/Interchange Lighting** will be low priority throughout and **Development of Local Road Network** will become a low priority in the second half of the planning horizon.

Figure 20 – Expected Timing of Recommended Improvements for Segment 5 of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

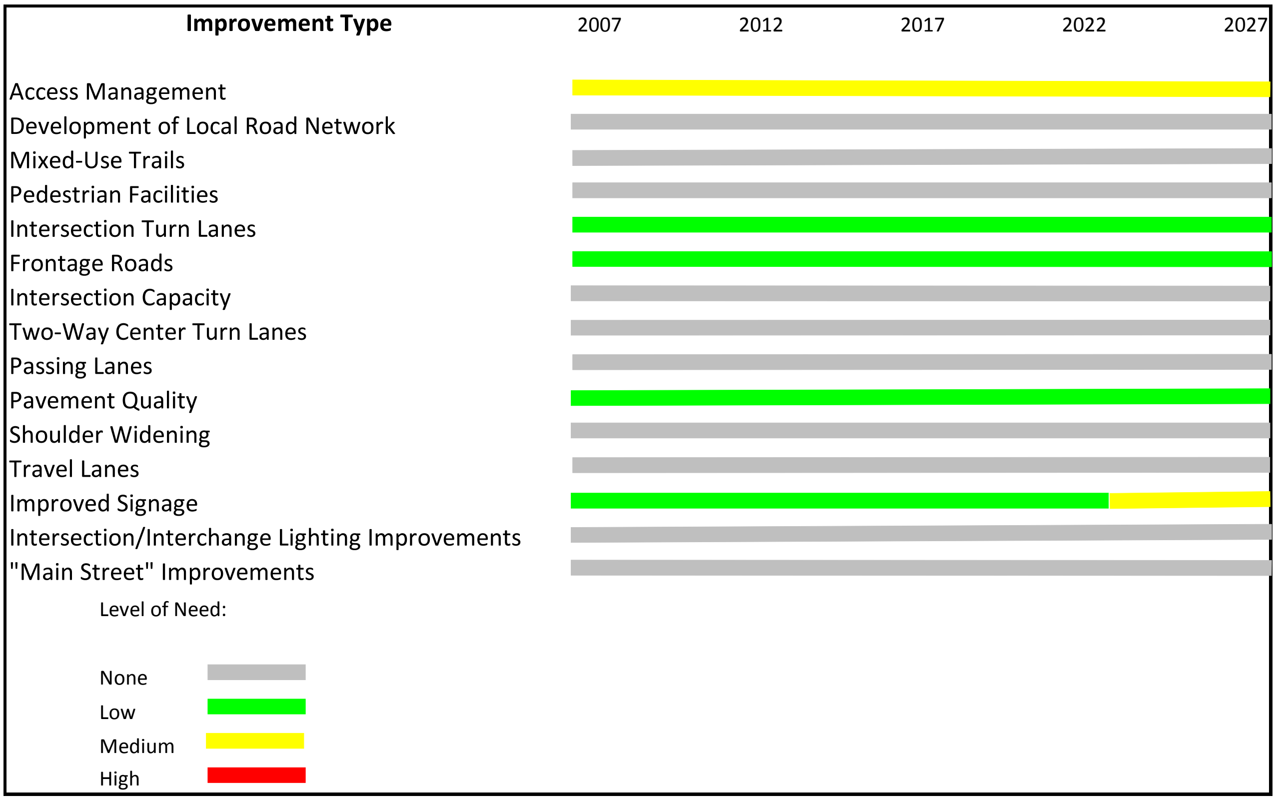
- **Access Management** – This part of US 20 is a 4-lane divided highway with one interchange, four intersections, and no private accesses. ITD's access spacing standard of 1 mile between intersections/interchanges for rural principal arterials is met along the entire segment. None of the recommended access improvements from the 2000 Corridor Plan have been implemented. It is recommended that the improvements for E. 200 N Rd. (full interchange), E. 300 N Rd. (intersection closure), E. 400 N Rd. (full interchange), and N. 2600 E Rd. (two-stage crossing) be implemented within the near-term (0 - 10 years). For the two-stage crossing improvement at N. 2600 E Rd., it is also recommended that the median be widened to at least 25' to allow crossing/turning vehicles to be completely protected from through traffic within the median opening . Because these are the only locations with access management needs, the overall level of need for this segment is medium.

- **Development of Local Road Network** – This is a largely rural segment with a low growth rate, so there will be a minimal need for additional local road network. The need, if any, will likely be to serve the limited growth expected in the St. Anthony area.
- **Mixed-Use Trails** – The need is minimal due to the low population and lack of recreational activity within area.
- **Pedestrian Facilities (Sidewalks and Crosswalks)** – In general, there is a minimal need for pedestrian facilities due to the low-density character of area. Within St. Anthony, sidewalks should be provided on the interchange overpass if they do not already exist to allow pedestrian crossings of the highway between north and south St. Anthony.
- **Intersection Turn Lanes** – Left-turn lanes exist at all of the intersections along this segment. There are existing and future right-turn lane needs at two of the four intersections. The need at N. 2600 E Rd. for an eastbound right-turn lane is significant. Because these are the only locations with turn lane needs and the right-turn volume threshold is significantly exceeded at only one of these locations, the overall level of need for this segment is low. The need at the other intersection (E. 300 N Rd.) will be eliminated once the intersection is closed (see Access Management).
- **Frontage Roads** – In general, there are minimal needs for frontage roads due to the low existing and future development levels adjacent to highway.
- **Intersection Capacity** – There are no existing or future capacity needs at any intersection. The existing and future levels of service are "C" or better.
- **Two-Way Center Turn Lanes** - Within this segment, the highway is divided with a grassy median and no intersections or private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – The pavement is in "poor" or "very poor" condition over 80% of the segment; this need will become more serious as traffic volumes increase.
- **Shoulder Widening** – The right shoulder widths of 5' are slightly below ITD's standard along a three mile section at the south end of the segment (northbound direction only).
- **Additional Travel Lanes** – There are no existing or future needs. The existing and future LOS is "A".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.8 Segment 6 (MP 347.9 to 352.7) – N. 2600 E Rd. to E. 800 N Rd.

As indicated in **Figure 21,** the greatest needs for improvements in Segment 6 are for **Access Management** which will be medium priority throughout the planning horizon. **Improved Signage** will be medium priority by the middle or end of the planning horizon. **Intersection Turn Lanes**, **Frontage Roads**, and **Pavement Quality** will be low priority throughout.

Figure 21 – Expected Timing of Recommended Improvements for Segment 6 of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

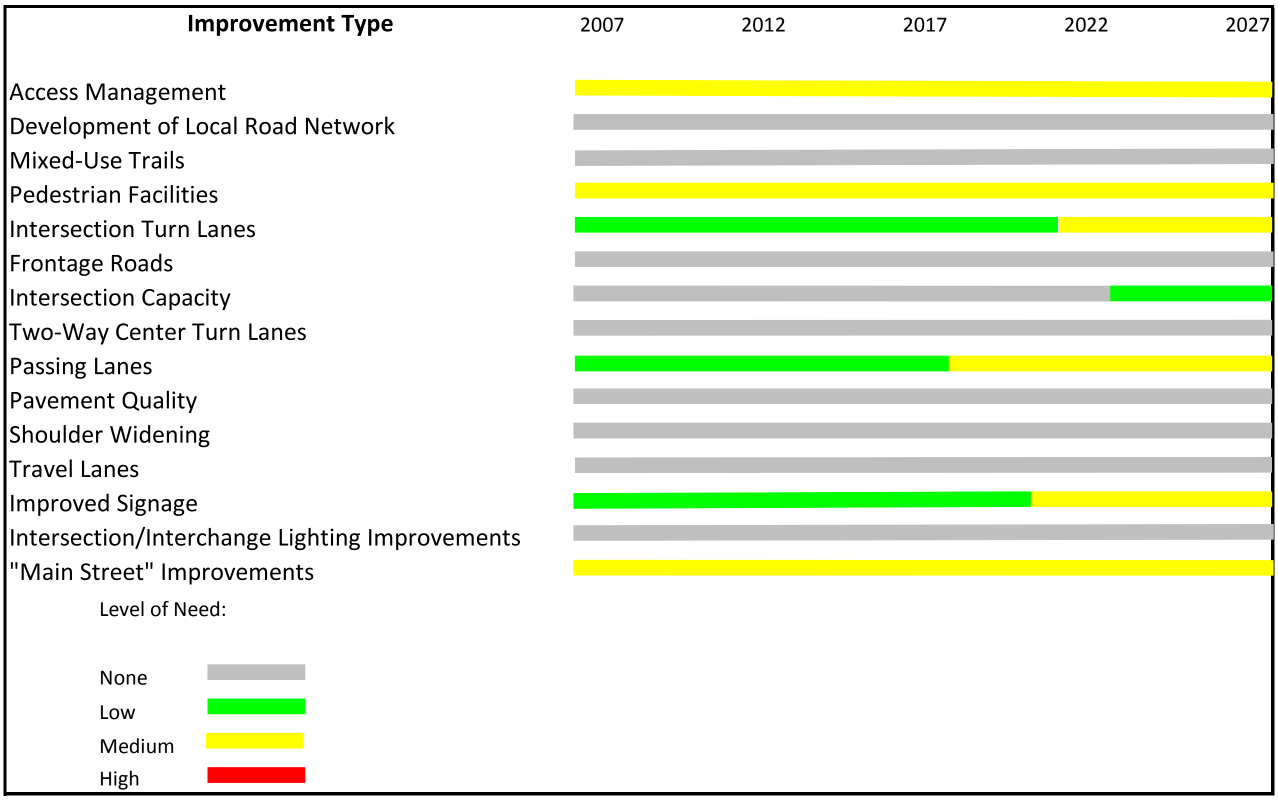
- **Access Management** – This part of US 20 is a 4-lane divided highway with four intersections and no private accesses. ITD's access spacing standard of 1 mile between intersections for rural principal arterials is met except between two intersections near Chester. None of the recommended access improvements from the 2000 Corridor Plan have been implemented. It is recommended that these improvements for N. 2650 E Rd. (intersection closure), E. 700 N Rd. (intersection closure), N. 2900 E Rd. (two-stage crossing), and E. 800 N Rd. (two-stage crossing) be implemented within the near-term (0 - 10 years). For the two-stage crossing improvements at N. 2900 E Rd. and E. 800 N Rd., it is also recommended that the median be widened to at least 25' to allow crossing/turning vehicles to be completely protected from through traffic within the median opening . Because these are the only locations with access management needs, the overall level of need for this segment is medium.

- **Development of Local Road Network** – This is a rural segment with a low growth rate, so there will be no need for additional local road network.
- **Mixed-Use Trails** – There is a minimal need due to the low population and lack of recreational activity in area.
- **Pedestrian Facilities (Sidewalks and Crosswalks)** – There is no need for pedestrian facilities due to the low-density character of the area.
- **Intersection Turn Lanes** – Left-turn lanes exist at all of the intersections along this segment. There are minor existing and future needs for right-turn lanes at two of the four intersections. The need at N. 2650 E Rd. will be eliminated once this intersection is closed (see Access Management).
- **Frontage Roads** – In general, there are minimal needs for frontage roads due to the low existing and future development levels adjacent to highway. A short frontage road exists on the south side of the highway near the E. 700 N Rd. intersection.
- **Intersection Capacity** – There are no existing or future capacity needs at any intersection. The existing and future levels of service are "B".
- **Two-Way Center Turn Lanes** - Within this segment, the highway is divided with a grassy median and only four intersections and no private accesses, so there is no need for two-way center turn lanes.
- **Passing Lanes** – Within this segment, US 20 is a 4-lane divided highway, so there is no need for passing lanes.
- **Pavement Quality** – The pavement is in "very poor" condition over a short section on the south end of the segment (less than 10% of segment). This need will become more serious as traffic volumes increase.
- **Shoulder Widening** – There are no shoulder width needs.
- **Additional Travel Lanes** – There are no existing or future needs. The existing and future LOS is "A".
- **Improved Signage** – See Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – These improvements would not be appropriate for any locations along this segment.

4.2.9 Segment 7 (MP 352.7 to MP 361.8) – N. 2000 E Rd. to E. 1425 N Rd.

As indicated in **Figure 22**, the greatest needs for improvements in Segment 7 are for **Access Management Pedestrian Facilities** and **"Main Street" Improvements** which will be medium priority throughout the planning horizon. **Intersection Turn Lanes**, **Passing Lanes** and **Improved Signage** will be medium priority by the middle or end of the planning horizon. **Intersection Capacity** will become a low priority by the end of the planning horizon.

Figure 22 – Expected Timing of Recommended Improvements for Segment 7 of US 20



A description of the rationale for rating of need for each of the categories of improvements is provided below.

- **Access Management** – This part of US 20 is a 2-lane undivided highway with multiple intersections and private accesses. ITD's access spacing standards are met throughout this segment, with the exception of Ashton, where both the intersection and approach spacing are below standard and there are several uncontrolled accesses. The 2000 Corridor Plan recommended that appropriate access locations be identified along US 20 in Ashton in conjunction with the construction of curbs, gutters, and sidewalks. It is recommended that these improvements be implemented within the near-term (0 - 10 years). Because Ashton is the only portion of this segment with access management needs, the overall level of need for the segment is medium.
- **Development of Local Road Network** – This is a largely rural segment with a low growth rate, so there will be a minimal need for additional local road network. Within Ashton, the existing local network adjacent to highway is fairly well developed.

- **Mixed-Use Trails** – There is minimal need due to low population and lack of recreational activity in the area.
- **Pedestrian Facilities (Sidewalks and Crosswalks)** – Sidewalks are needed along US 20 within Ashton (see Access Management). Existing pedestrian volumes across the highway are likely too low for crosswalks but these may be needed in the future depending on the amount and character of development on west side of US 20, particularly near the elementary school.
- **Intersection Turn Lanes** – Turn lanes exist at two intersections. The 2000 Corridor Plan recommended the installation of left-turn lanes at all intersections. The need for these will likely be low however, due to low existing and future levels of development and relatively low highway volumes.
- **Frontage Roads** – The number of farm accesses is very limited within this segment of corridor, so there is a minimal need for farm frontage roads. Existing development adjacent to highway is also not dense enough to warrant frontage roads.
- **Intersection Capacity** – There are no existing capacity needs. The existing LOS at the SH-47 intersection is "C" and the future LOS is "D". This intersection may need to be signalized in the long-term.
- **Two-Way Center Turn Lanes** – The low existing and future turn volumes do not warrant two-way center turn lanes within the rural portion of this segment. A two-way center turn lane already exists in Ashton.
- **Passing Lanes** – Existing LOS is "C-D" and the future LOS is "D-E". The 2000 Corridor Plan recommended that passing lanes of two miles in length should be constructed in each direction. This improvement has not been implemented. It is recommended that passing lanes be constructed within the long-term time frame (10 - 20 years).
- **Pavement Quality** – The pavement is in "poor" condition over a very short section of the segment near Ashton (less than 5% of the segment).
- **Shoulder Widening** – There are no shoulder width needs.
- **Additional Travel Lanes** – There are no existing or future needs for additional travel lanes. The capacity needs will be accommodated by passing lanes (see Passing Lanes).
- **Improved Signage** – The 2000 Corridor Plan recommended improved signing where the divided highway transitions from four lanes to two lanes to prevent driver confusion. This was the site of a fatal, head-on accident involving a motorist driving on the wrong side of the road. The existing roadside signing likely meets the minimum requirements for the end of a divided highway section. To achieve better driver awareness, however, an overhead sign with a "Divided Highway Ends" message and beacons is recommended. See also Corridor-Long needs at the end of this report section.
- **Intersection Lighting Improvements** – See Corridor-Long needs at the end of this report section.
- **"Main Street" Improvements** – The “Main Street”-type improvements included as a part of the Access Management improvements described above (identification of appropriate access locations along US 20 in Ashton in conjunction with the construction of curbs, gutters, and sidewalks) should be implemented within the near-term (0 - 10 years).

4.2.10 Corridor-Long

There are several types of improvement needs that are generally applicable throughout the corridor, as described below.

1. Signing

Recent new federal regulation requires that all roadway signing have a minimum retroreflectivity rating. Therefore, all existing signs along the US 20 corridor will need to be tested, with replacement of signs that do not meet the minimum rating. Public agencies will have until January 2015 to replace any regulatory, warning, or post-mounted guide (except street name) signs and until January 2018 to replace any street name signs and overhead guide signs that are identified as failing to meet the minimum retroreflectivity levels.

In addition, the retroreflective characteristics of newer signs eliminates the need for the lighting of signs, as recommended in the 2000 Corridor Plan.

Additional signing needs are:

- Advance signing is needed at intersections. At most intersections, this signing does not exist or is inadequate. Advance signing could also be used for private accesses where warranted based on turn volumes.
- Some signs, particularly secondary guide signs, are too small. The size of the signs should comply with the MUTCD guidelines for expressway signing.
- Crossroad signs could be added to the top of stop signs at intersections.

2. Lighting

Partial or complete lighting should be considered at all interchanges along the corridor. Currently, only some of interchanges have lighting. Complete lighting would provide uniform lighting throughout the interchange area, including the US 20 main lines, direct connections, ramp terminals and frontage or crossroad intersections. Partial lighting would provide illumination only at decision making areas such as ramp junctions, ramp terminals, and crossroads at frontage roads. The current status of interchange lighting along the corridor is shown below:

Segment No.	Interchange No.	Partial Lighting	Full Lighting
1A	119 (I-15)		√
	307		√
	308		√
	309	√	
	310	√	
1B	311	√	
	313	√	
2	315		

Segment No.	Interchange No.	Partial Lighting	Full Lighting
	318	√	
	320	√	
	322	√*	
4A	332		
	333		
	337		
4B	338	√**	
	339	√	
5	346		

*   North side of interchange only.
**West side of interchange only.

Based on existing conditions, intersection lighting is not recommended as it was in the 2000 Corridor Plan because none of the intersections along the corridor are high-accident locations and all have relatively low crossroad volumes.

3. Rumble Strips

The 2000 Corridor Plan recommended that the existing rumble strip configuration be changed from strips that extend across the entire shoulder at 30’ intervals to strips that run parallel to the highway. This would provide bicyclists with a more comfortable ride and provide motorists with continuous rather than intermittent warning. The change has been implemented along certain sections of the corridor, but not others. It is recommended that this be done along the entire corridor.

APPENDIX A

Technical Memorandum

US 20, US 26 and SH 33 Corridor Plan Refreshes

Population, Employment and Travel Forecasts

TECHNICAL MEMORANDUM

Corridor Plan Refreshes U.S. 20, U.S. 26, and S.H. 33

Population, Employment, and Travel Forecasts

PREPARED FOR:

Idaho Transportation Dept.
District 6

PREPARED BY:

DKS Associates
TRANSPORTATION SOLUTIONS
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510.763.2061

August 2008

Technical Memorandum

US 20, US 26 and SH 33 Corridor Plan Refreshes

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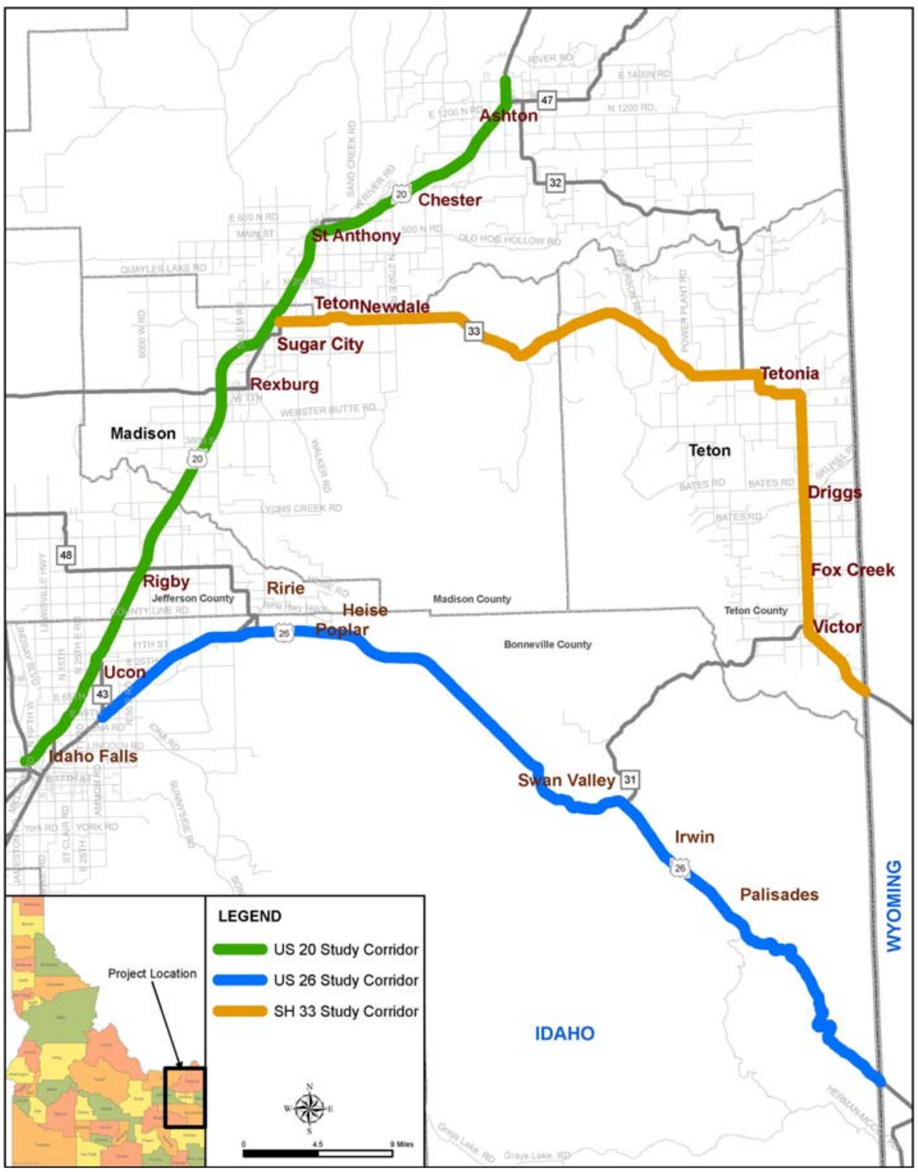
Contents

1 Overview

As part of an effort to "refresh" the corridor plans in District 6 of the Idaho Transportation Department, DKS Associates has prepared a travel forecasting tool that will allow the District to generate future-year forecasts for any link on the state system. DKS has used the tool to prepare forecasts for corridor plan refreshes for US 20, US 26 and SH 33. The locations of these corridors are illustrated in **Figure 1**. The forecasts have included estimates of population, employment and travel in the five counties (Bonneville, Jefferson, Fremont, Madison, and Teton) that these corridors traverse. This tool is GIS-based and is linked to Excel spreadsheets to perform analytical computations. It covers all of the nine counties in District 6. The GIS system uses ArcView and has been designed to be compatible with other GIS work being developed for the District.

Figure 1 Locations of US 20, US 26 and SH 33 Corridors



The travel forecasting methodology developed by DKS provides the District with the capability to specify a forecast year for any segment in the state system and get a future year Average Annual Daily Traffic (AADT), Design Hour Volume (DHV)[1] and Design Day Volume (DDV)[2]. The methodology provides a forecast based on an extrapolation of traffic counts for all segments and a forecast based on forecasted growth in population and employment in areas where the growth is expected to be at a higher rate than the historical traffic counts or anywhere that forecasts from a local transportation model are available. This approach was chosen over the development of a district-wide or state-wide travel model after an assessment of alternative methods. DKS reviewed the experience of other state DOTs, much of which was already documented in recent research reviews.

Bucher, Willis and Ratliff Corporation conducted a review for the South Dakota Department of Transportation in 2008[3]. The research examined the travel forecasting methodology used in South Dakota and compared it to approaches used in Arizona, Colorado, Idaho, Iowa, Minnesota, Montana, Missouri, Nebraska, North Dakota, New Mexico, Wisconsin and Wyoming. Their research identified the method proposed for ITD District 6 to be a practical method for developing forecasts to support needs assessment and planning for the state highway system. The researchers concluded that the development of interregional or statewide models for forecasting state highway volumes could be difficult and expensive and required a significant commitment of budget and labor support.

The Transportation Research Board conducted a review of travel forecasting methods by using a peer review[4]. The peer review found that taking a statewide modeling approach was a fairly recent (last ten to fifteen years) phenomenon. While identifying the potential benefits of a statewide model they also acknowledge that developing one was a challenge for states to undertake. They state "Some states such as Colorado have considered statewide models but have not embarked on them due to the uncertainties of a useful payoff and risk of failure. Some models have been developed and abandoned. Others seem in imminent danger, such as Missouri. Still others seem to be in a continuous state of development with the big payoff always just around the corner."

In 2001, researchers at the National Institute for Advanced Transportation Technology at the University of Idaho completed a statewide transportation planning project for Idaho that included the development of a statewide model.[5] While the researchers felt that the model performed reasonably well in validation tests, they recommended that the State continue to use projection of historical traffic counts as its basic forecasting method particularly for low-volume rural roads. For higher volume urban roads, the researchers recommended continued enhancement of the urban area models being developed by the metropolitan planning organizations (MPOs) and counties.

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[1] Design Hour Volume is the 30th highest hourly volume of the year.
[2] Design Day Volume is the estimated 24-hour volume for the day on which the Design Hour volume occurs.
[3] Bucher, Willis & Ratliff Corporation, ***Review of Travel Demand Forecasting Requirements in the SDOT***, prepared for the South Dakota Department of Transportation, Office of Research, Kansas City, MO., February 2008.
[4] Transportation Research Board, ***Statewide Travel Demand Modeling: A Peer Exchange***, Transportation Research Circular Number E-C075, National Academy Press, Washington, D.C., August 2005.
[5] Chang, Karl, Chhan Ream and Michael Dixon, National Institute for Advanced Transportation Technology, University of Idaho, ***Idaho Statewide Transportation Planning Project: Final Report***, Moscow, Idaho, December 2001.

Models for rural corridors or intercity travel present different challenges than models for urban travel. Urban travel is dominated by weekday travel that is usually fairly consistent over a week and generally consists of trips made regularly by residents of the area. Intercity travel and travel in rural corridors tends to be composed of trips that are made only periodically and that do not follow a regular pattern over a week. It is also composed of a higher percentage of trips made by travelers that do not live in the study area. This could include intercity travel from outside the study area coming into, out of, or through the corridor. In Eastern Idaho, it is also often recreational travel by visitors to Idaho or to the corridor of interest.

Capturing this periodic travel, recreational travel and non-resident travel can be difficult and requires a large amount of travel survey data to develop the model parameters. Such an effort is generally justified only when there is considerable uncertainty about the rate of growth of travel in corridors of interest and when the future growth is likely to be correlated with characteristics of the study area population, employment or attractions. As the population in Eastern Idaho grows and urban travel becomes a more important element in the corridor traffic volumes, a district-wide model that estimates traffic volumes on the state system may become more important. Under the current conditions, the proposed approach of relying on a combination of forecasts from local models and extrapolation of observed trends in traffic volumes for the corridors seems most cost effective. The approach that DKS has taken uses this as the foundation for travel forecasting but in a framework that can later be used to support a more complex regional forecasting model as the need arises.

The work in this project has produced a consistent framework for forecasting that will allow the District to produce traffic forecasts for corridor studies or District-wide plans in a short time frame and with available resources. The methodology does not represent a full travel forecasting model but is instead a database management tool that uses available data to produce forecasts. As the methodology is applied for studies, additional information can be added to the database that supports the methodology. By developing the framework for consistent forecasting, the data gained from each corridor study or update will not be lost but will be stored in a way that makes it useful for future forecasting efforts. This will allow the evolution of a procedure and database that could eventually support the development of a full-scale travel model for the nine-county district.

The approach taken to the development of the travel forecasting methodology has been to construct a database for all segments in the state highway system within District 6 that can be used to store data on traffic counts and produce forecasts by applying appropriate growth rates to a baseline traffic count for each section of roadway in the ITD GIS system. DKS has used the District's GIS roadway databases to establish a forecasting network as the basis for the procedure. DKS used the GIS files to construct a set of links and nodes for which characteristics of roadway segments and intersections or interchanges can be stored. The network was developed with the intention that it could ultimately be the basis for a full-scale travel model network.

Four different travel models have been developed for use in different parts of District 6. County-specific models have been developed for Madison and Jefferson Counties. In addition a model was developed by the Bonneville Metropolitan Planning Organization (BMPO) that covers the urbanized portion of Bonneville County, and a model was developed for use in Teton County that incorporates five counties in Idaho: Teton, Bonneville, Jefferson, Madison and Fremont: plus Teton County, Wyoming. These models were used to provide a land-use based forecast of travel on the state highway system for high-growth areas. For the corridor refreshes, the Teton County model has been used to provide the land-use based forecasts for Teton (ID) and Fremont Counties and the portion of Bonneville County not covered by the BMPO model.

Trend-line forecasts from historical traffic counts were also developed for all segments of the state system in District 6. To apply this method, linear regression analysis was performed using historical AADT traffic count data obtained from the ITD Traffic Survey and Analysis Section. This was done separately for the roadway segments on which the Automated Traffic Recording (ATR) stations are located and where there were an adequate number of historical counts to perform a regression analysis. With this technique, the historical traffic counts (the dependent variable) were regressed against time (the independent variable) over the 2000 – 2006 time period. The result was an annual growth factor for each of the count locations that could then be applied to produce traffic forecasts for other roadway segments in the state system. For each roadway segment, the growth factor from the nearest count location was applied to produce the travel forecast.

2 Population and Employment Forecasts

Population and employment forecasts for the corridor plan refreshes in District 6 were produced using a variety of available information on expected or potential growth. The primary source of information was historical trends in growth for counties and cities. Historical growth rates were compared to other forecasts that have been prepared in recent years including forecasts for travel models used for developing county-wide and regional transportation plans in Bonneville, Jefferson, Madison and Teton Counties. Several regional research efforts have been undertaken in recent years that have provided useful information about the possible growth that can be expected in eastern Idaho and western Wyoming. These include research by Dr. Larry Swanson from the O'Connor Center for the Rocky Mountain West at the University of Montana[6], the Idaho Division of Financial Management[7], the Idaho Department of Labor[8], and the Western Transportation Institute of Montana State University[9]. These research efforts have predicted strong economic growth in the next decade in the region as long as access can be maintained on the region's roadways and the excellent outdoor recreational opportunities and scenic beauty are not compromised.

Within the county forecasts, subarea forecasts are developed for individual cities, towns and rural subareas of the county. The subarea forecasts are based primarily on work performed for regional travel models in Bonneville, Jefferson, Madison and Teton Counties. Subarea forecasts for Fremont County were developed based on data on existing demographic and economic characteristics from the US Census, data from the Idaho Department of Labor and conversations about growth possibilities with county planners and economic specialists.

Between 1960 and 2006, the population in Idaho grew from 667,191 to 1,466,465. This represented an average annual growth of about 17,000 residents for the 46-year period. This represents a linear

[6] Swanson, Larry, "Growth and Change in the Yellowstone-Teton Region," O'Connor Center for the Rocky Mountain West, University of Wyoming, March 2007.
[7] Idaho Division of Financial Management, "Idaho Economic Forecast," Boise, Idaho, July 2007.
[8] Idaho Department of Labor, "Idaho Occupational Projections for 2014 – Hot Jobs for the East Central Region," Web report, undated.
[9] Johnson, Jerry; Bruce Maxwell; Monica Brelsford; and Frank Dougher; "Rural Residential Development and Transportation Infrastructure in High Growth Rural Communities;" Western Transportation Institute; Montana State University; Bozeman, Montana; October 2003.

growth rate[10] of about 1.18% when compared with the 2006 population. During that same period the five eastern Idaho Counties of Bonneville, Fremont, Jefferson, Madison and Teton grew from 79,313 to 168, 550 or about 2000 residents a year. This represents a linear growth rate for the 46-year period of about 1.15% when compared to the 2006 population - slightly less than the growth rate for the state. In the sixteen years between 1990 and 2006 the linear growth rate in the five eastern counties has been 1.51% compared with a statewide growth rate of 1.96%.

The Idaho Department of Labor provides estimates of employment by county and these are presented in **Table 2**. The rate of linear growth for the five county area between 1996 and 2007 when compared to 2007 produces a growth rate of 1.90%. The largest amount of growth was in Madison County but the highest rate of growth was in Teton County.

Forecasts of population and employment by county in eastern Idaho were produced by extrapolating the growth in population and employment in each county from 2000 to 2006 using a linear growth rate. Forecasts were developed for 2017, 2027 and 2057 to represent 10, 20 and 50 year forecasts from the date of this report. The results are presented in **Table 1**. Forecasts of employment were produced by extrapolating the growth rate between 1996 and 2007. **Table 2** presents the results of the forecasts for employment. The growth rates used are linear growth rates or the average annual increment of growth expressed as a percentage of the 2006 value.

Table 1 Population Forecasts by County

	U.S. Census Population Estimates			Growth Rate 1990-2006	Forecasts Based on Extrapolation of Growth Rate 1990 to 2006		
	1990	2000	2006		2017	2027	2057
Idaho	1,006,749	1,293,953	1,466,465	1.96%	1,782,506	2,069,817	2,931,748
Bonneville County	72,207	82,522	94,630	1.44%	109,631	123,267	164,178
Fremont County	10,937	11,819	12,369	0.72%	13,352	14,246	16,927
Jefferson County	16,543	19,155	22,350	1.58%	26,228	29,754	40,330
Madison County	23,674	27,467	31,393	1.50%	36,584	41,303	55,461
Teton County	3,439	5,999	7,838	3.48%	10,841	13,571	21,761
5-County	126,800	146,962	168,580	1.51%	196,636	222,141	298,657

Table 2 Employment Forecasts by County

[10] Growth can be expressed in terms of a linear growth rate, which implies a relatively constant increment of growth each year, or as a compound annual growth rate, which implies an increasing amount of growth each year. An analysis of the growth patterns in population employment and travel in eastern Idaho since 1960 suggested that a linear growth rate was better predictor for the corridors. Linear growth rates have been used in the corridor refreshes to provide the planning estimates of population, employment and traffic volumes, but the average annual compound growth rates have also been used to provide an upper-end estimate of potential growth.

County	Idaho Department of Labor Estimate of Employment			Growth Rate 1996 to 2007	Forecast of Employment Based on Extrapolated Growth Rate		
	1996	2000	2007		2017	2027	2057
Fremont	4,185	5,418	6,221	2.65%	7,867	9,514	14,452
Bonneville	42,274	40,212	47,593	0.82%	51,508	55,424	67,170
Madison	8,862	12,391	15,498	3.81%	21,402	27,307	45,020
Jefferson	9,002	8,694	10,427	1.02%	11,486	12,546	15,724
Teton	2,548	3,558	4,273	4.37%	6,140	8,008	13,610
5-County Area	68,867	72,273	86,019	1.90%	102,367	118,715	167,760

Within each county in the corridors, subarea forecasts were developed using a combination of historical growth rates from census data and subarea travel model data sets and conversations with planners in each county. The sections below provide a table displaying the extrapolation of the historical census data on population and a summary of the discussions with local planners. To assist with the travel forecasting along the corridor, population and employment forecasts were developed at a more detailed zonal level. The transportation planning models developed previously for most of Bonneville County, all of Jefferson County and all of Madison County were each supported by a more detailed zone system. In addition, a model system that was developed for Teton County included all five of the eastern Idaho counties. It was used to represent Teton County, Fremont County and the portion of Bonneville County not included in the BMPO model.

The zonal data for population and employment in each of the local models was adjusted to match the forecasts developed for the towns and cities and for the county totals estimated from the extrapolation of the data from the U.S. Census and Idaho Department of Labor presented in Tables 1 and 2. Because historical employment data were not available by city or town, the model data sets were adjusted to match the county level forecasts. These revised forecasts were then used to develop forecasts by subarea. These are illustrated in **Figure 2** for population and in **Figure 3** for employment. Subarea employment data was not available from the Jefferson County model and so the distribution of employment for Jefferson County included in the Teton County model was used.

The twenty-year forecasts of growth illustrated in **Figures 2** and **3** reflect a continuation of urbanization of the US 20 corridor, but concentrated in the existing urbanized areas of Idaho Falls (Idaho Falls, Ammon, Iona and Ucon) and Rexburg. The twenty-year population growth in these areas will constitute 65% to 75% of the growth in the five counties. Despite the concentration of population growth within these two urban areas, much of the growth that occurs in the other parts of the counties in the corridors is likely to be adjacent to or near US 20 because of the superior access provided by the roadway. This is especially true for new commercial development for which roadway access is an important competitive factor. This is likely to lead to more urbanization of the other parts of the US 20 corridor besides the Idaho Falls and Rexburg areas. A second major area of growth will be in the Teton Valley portion of Teton County. Roughly 10% of the growth in the five-county area is likely to occur near SH 33 near the towns of Tetonia, Driggs and Victor.

Figure 2 Twenty-Year Population Growth by Subarea

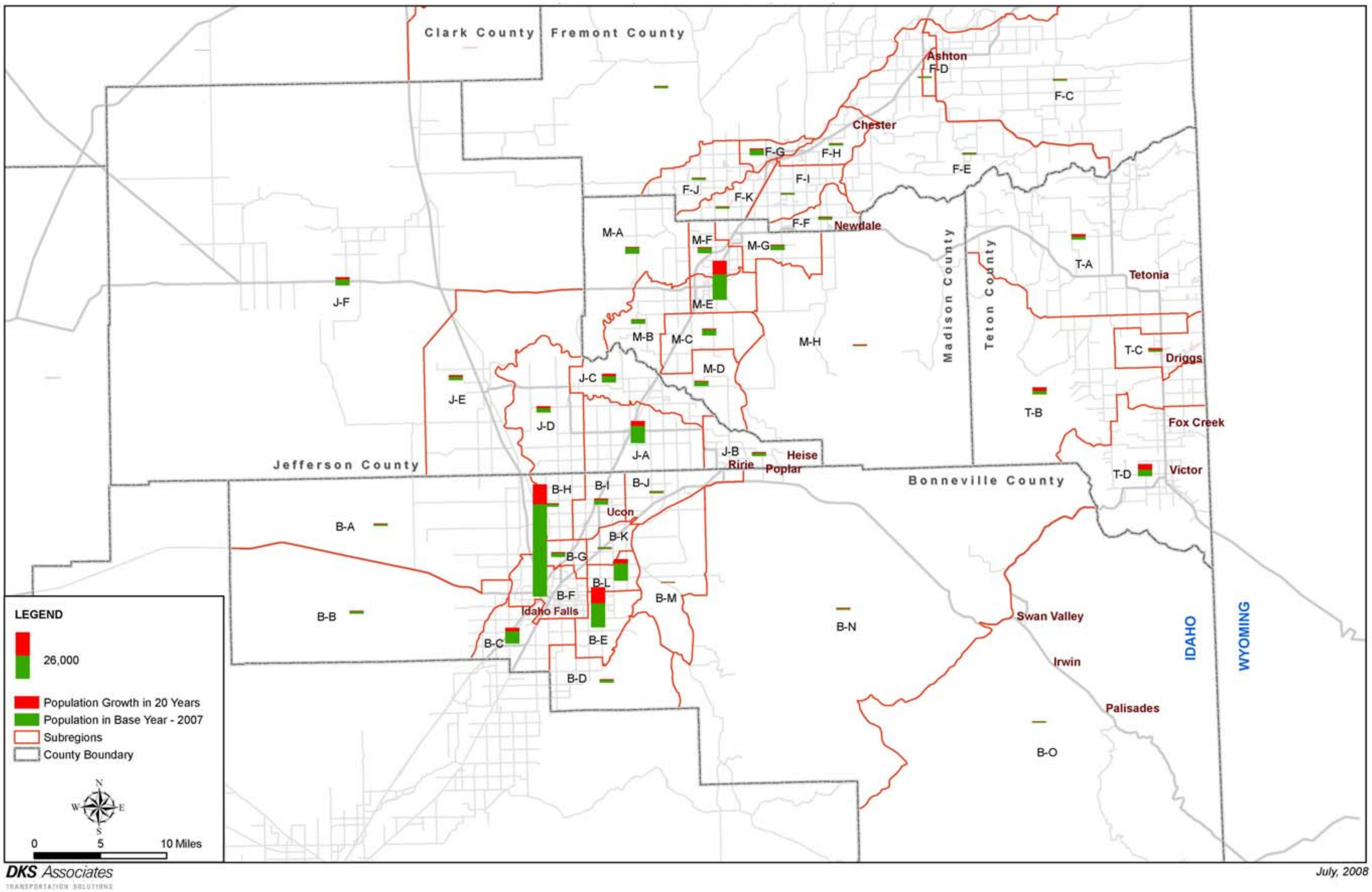
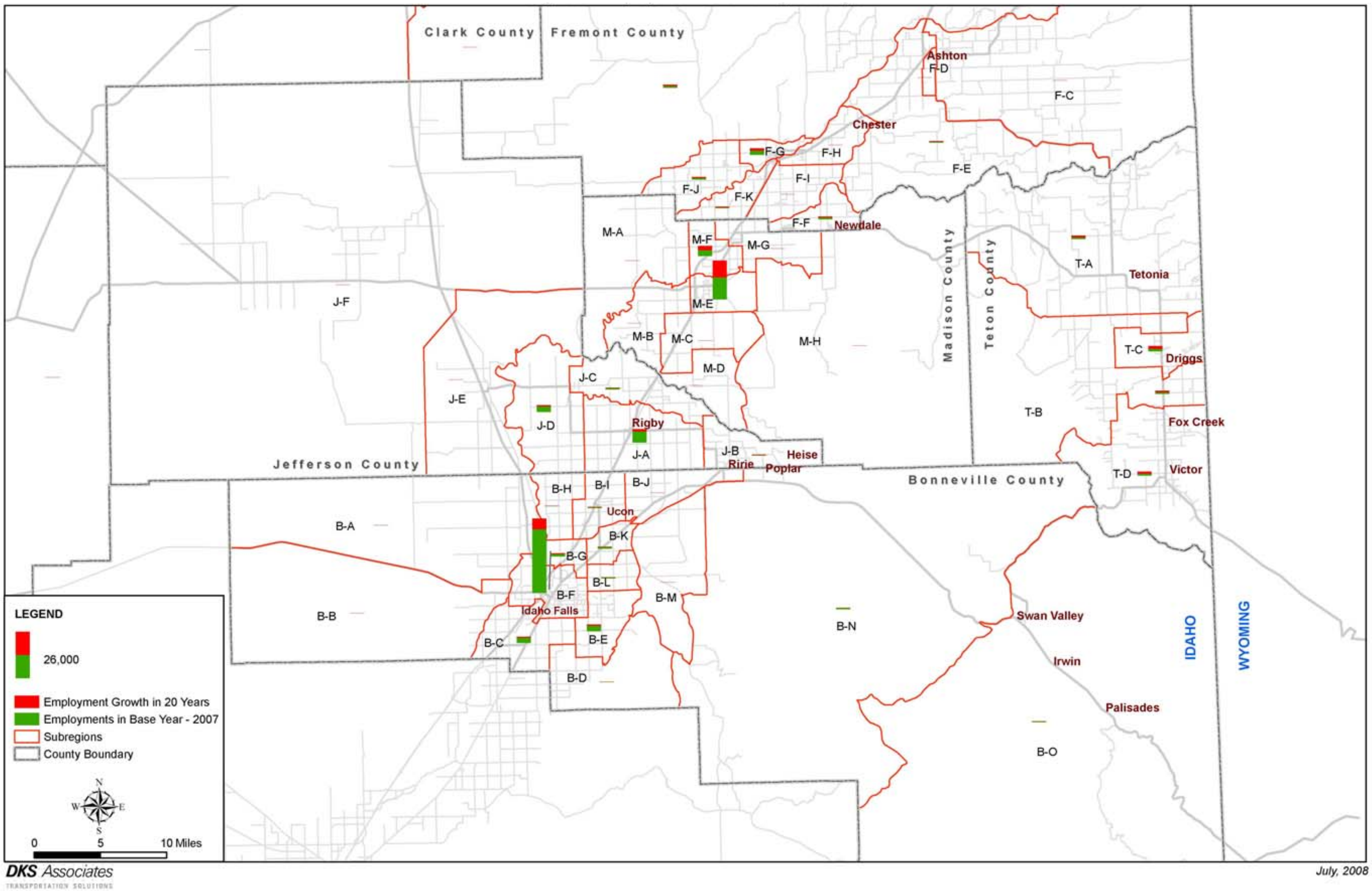


Figure 3 Twenty-Year Employment Growth by Subarea



Bonneville County

Growth is occurring on all sides of the built-out areas of Idaho Falls. As indicated in **Table 3**, the most rapid growth is occurring on the east side in the towns of Ammon and Iona and on the north side in Ucon. Very little growth is occurring in the rural areas of the county. Small amounts of development are occurring along US 26. This is mostly construction of single homes or small subdivisions on land adjacent to US 26.

Table 3 Historic Population Estimates and Forecasts for Bonneville County

	Ammon	Idaho Falls	Iona	Swan Valley	Ucon	Remainder	City Total	County
1970	2,545	35,776	890	235	664	11,140	40,110	51,250
1980	4,669	39,739	1,072	135	833	19,532	46,448	65,980
1990	5,002	43,973	1,049	141	895	21,147	51,060	72,207
2000	6,187	50,730	1,201	213	943	23,248	59,274	82,522
2006	12,065	52,786	1,276	235	1,066	27,202	67,428	94,630
Linear Growth Rate 90-06	3.39%	1.07%	1.12%	2.56%	0.95%	1.33%	1.49%	1.44%
2017	16,558	58,985	1,433	301	1,177	31,176	78,455	109,631
2027	20,643	64,621	1,576	361	1,278	34,788	88,479	123,267
2057	32,898	81,527	2,005	542	1,580	45,626	118,552	164,178

Jefferson County

Virtually all of the growth in Jefferson County is concentrated on the east end of the county near Rigby and US 20. New housing is being built to serve commuters to the Idaho National Laboratory (INL), Idaho Falls, and Rexburg. New subdivisions are planned along US 20 and around the outskirts of Rigby. The growth expected in Rigby and the remainder of the county is shown in **Table 4**.

Table 4 Historic Population Estimates and Forecasts for Jefferson County

	Rigby	Remainder	City Total	County
1970	2,324	9,295	2,324	11,619
1980	2,624	12,680	2,624	15,304
1990	2,681	13,862	2,681	16,543
2000	2,998	16,157	2,998	19,155
2006	3,291	19,059	3,291	22,350
Linear Growth Rate 90-06	1.14%	1.65%	1.14%	1.58%
2017	3,703	22,525	3,703	26,228
2027	4,078	25,676	4,078	29,754
2057	5,202	35,128	5,202	40,330

Madison County

Growth in Madison County is driven by a number of factors that result in growth being spread over a large area around Rexburg. The Brigham Young University Campus at Rexburg has resulted in a significant economic thrust for the county. The campus is located on the south side of Rexburg and has stimulated housing and employment growth in the adjacent parts of Rexburg. The expected growth by area within Madison County is presented in **Table 5**.

Table 5 Historic Population Estimates and Forecasts for Madison County

	Rexburg	Sugar City	Remainder	City Total	County
1970	8,272	617	4,563	8,889	13,452
1980	11,559	1,022	6,899	12,581	19,480
1990	14,298	1,275	8,101	15,573	23,674
2000	17,257	1,242	8,968	18,499	27,467
2006	26,657	1,458	3,278	28,115	31,393
Linear Growth Rate 90-06	2.72%	0.68%	-7.99%	2.61%	1.50%
2017	34,619	1,567	398	36,186	36,584
2027	41,857	1,667	(2,220)	43,524	41,303
2057	63,571	1,965	(10,075)	65,536	55,461

Fremont County

Almost all of the expected growth in Fremont County will be in the recreational area in or around Island Park. Most of the undeveloped land in the county is federal land and so the opportunities for new development are limited to the few locations under private ownership. Two tracts near Island Park are being considered for development and together could produce 1400 new housing units. Several significant housing developments are also being considered on SR 47. The expected growth by area within Fremont County is presented in **Table 6**.

Table 6 Historic Population Estimates and Forecasts for Fremont County

	Ashton	St. Anthony	Remainder	City Total	County
1970	1,187	2,877	4,646	4,064	8,710
1980	1,219	3,212	6,382	4,431	10,813
1990	1,114	3,010	6,813	4,124	10,937
2000	1,129	3,342	7,348	4,471	11,819
2006	1,092	3,376	7,901	4,468	12,369
Linear Growth Rate 90-06	-0.10%	0.71%	0.84%	0.51%	0.72%
2017	1,080	3,639	8,633	4,719	13,352
2027	1,069	3,879	9,298	4,948	14,246
2057	1,037	4,596	11,294	5,633	16,927

Teton County

Most of the growth in Teton County is between mileposts 130 and 150 on SR 33 between Tetonia and Victor. New subdivisions are being planned and constructed to provide housing for residents that commute to the Jackson area of Wyoming for work and for individuals retiring or seeking vacation homes in Idaho. The expected growth by area within Teton County is presented in **Table 7**.

Table 7 Historic Population Estimates and Forecasts for Teton County

	Driggs	Tetonia	Victor	Remainder	City Total	County
1970	727	176	241	1,207	1,144	2,351
1980	727	191	323	1,656	1,241	2,897
1990	846	132	292	2,169	1,270	3,439
2000	1,100	247	840	3,812	2,187	5,999
2006	1,253	242	1,454	4,889	2,949	7,838
Linear Growth Rate 90-06	2.03%	3.04%	4.87%	3.47%	3.51%	3.48%
2017	1,533	323	2,233	6,753	4,088	10,841
2027	1,787	396	2,941	8,447	5,124	13,571
2057	2,550	617	5,065	13,529	8,232	21,761

3 Travel Forecasts

As indicated in the introduction of this memorandum, two methods were used to develop future-year traffic forecasts for the three state routes in the corridor plan refreshes: travel models and historical traffic counts. One of the disadvantages of the travel models is their orientation to average annual weekday traffic. The models use trip generation rates for trips by residents or employees of the zones in the model study area, but do not explicitly model travel by visitors to the area for tourism or recreational travel. Some of these trips are captured by factors to represent trips coming into or out of a model study area and by factors added into the model to raise the number of modeled trips to match some observed traffic counts used in calibrating the model. Traffic count data were available for the past ten years for most segments of the three state highways for which the corridor plans were being updated.

While the counts captured all travel, not just the travel by residents or employees of the counties, most of the counts also represented the average annual weekday traffic volumes and did not capture the volumes during the peak travel seasons. Because most of the needs assessment for state routes in eastern Idaho is done with respect to the 30th highest hour of travel during the year, the peak travel conditions are of special interest. Five count locations (two on US 20 and one each on US 26 and SH 33) are permanent count stations and provide counts for all days of the year. Data from these permanent count locations provided a distribution of traffic volumes over the year for each corridor that could be used to estimate the Design Day Volume and the Design Hour Volume from the AADT estimate.

As previously indicated, models were available for Bonneville, Madison, Jefferson, and Teton Counties. The model for Teton County covered all of Teton, Bonneville, Jefferson, Madison and Fremont Counties in Idaho and Teton County in Wyoming. Each of the available models was revised somewhat to reflect the most current information for the region. The baseline data for population and employment were updated to match the baseline data from the most recent U. S. Census and Idaho Department of Labor reports. In addition, the population and employment growth rates represented in the model data sets were revised to reflect the census-based forecasts and other regional studies of growth expectations for eastern Idaho described in the previous section of this memorandum. Modifications were also made to some of the model parameters for flow into and out of model areas to eliminate some large discrepancies in the traffic volumes at the boundaries of the counties produced by the four different models.

The second method for developing traffic forecasts for the three state highways was extrapolation of growth rates from historical traffic counts. Historical traffic volumes were available from two sources, each maintained by ITD: Automatic Traffic Recorder Stations (ATRs) and Short-Term Count locations. The ATR stations provide continuous counts all year long in a format that can be summarized by direction, by 15 minute period or any other time period. This can include hour, day, week month or year. Because the ATR stations record counts continuously, they provide data for every day of the year. The Short-Term Count locations have data for only limited time periods. These counts are used with historical data from the segment and ATR stations near the segment to create estimates of Average Annual Daily Traffic (AADT). Using data from a limited number of Weigh-in-Motion (WIM) systems within the district, estimates of the percent of truck traffic are also developed for each Short-Term Count location. Because of the variability in when during the year counts are taken, how often they are taken, and the availability of ATR or WIM data to develop the AADT estimates, there is considerable variability in the year-to-year estimates of traffic for the Short-Term Count locations.

To develop forecast for future years, a rate of traffic growth was developed for each section of the state route within the corridor. The sections are defined by the locations of short-term counts or AADT estimates available in ITD's data systems. The growth increment for each was developed by examining the pattern of historical AADT estimates for the period from 1996 to 2006 and the pattern of traffic growth at the ATR locations for the period 2001 to 2006. Two rates were developed for each: a linear growth rate (equal increments of growth each year) and a compound annual growth rate (constant growth rate compounded each year). Both were estimated using regression analysis so that all observations are used in the rate estimation. The average annual compound growth rate was estimated using linear regression on log-transformed traffic volumes. This produces a growth rate for an increasing increment of growth in each year.

The individual sections along a roadway are grouped into segments on the basis of obvious changes in the roadway function. Changes are usually the result of a town on the route or an intersection of another major state route. The change occurs because the travel patterns change. This can usually be seen in the data in a change in the total volume or a change in the growth rate. Sometimes changes such as these occur without an obvious physical change in the roadway or in the land use around the roadway.

Where there was an ATR station in a segment, the average growth rate for ATR location was used for the all of the segment in the segment. For segments of the roadway that do not have an ATR station in close proximity and where there is a fair degree of consistency in the growth rates from the section Short-Term counts, an average of the growth rates for the segments in the section were used. If there is a high degree of consistency within a segment except for a single section, that section is excluded and an average growth rate is calculated for the remaining sections.

The forecasts of growth in traffic volumes on US 20, US 26 and SH 33 were compared with the forecasts of growth using the local area models as adjusted by DKS to match the forecasts of growth in population and employments in **Tables 4-8**. The results are presented in **Table 8** for US 20, **Table 9** for US 26 and **Table 10** for SH 33. The forecasts of average annual daily traffic volumes on the state route are presented for 2027.

In almost all cases, the count-based forecast is higher than the model-based forecast. The exceptions to this are on US 20 on the first section in Madison County near Lorenzo and three sections near Sugar City and on SH 33 in the six sections near US 20 between Sugar City and Newdale and in one section near SH 32 northwest of Tetonia. On 45 of the 56 highway sections evaluated, the count-based forecast was higher than the model-basted forecast. The percentage differences range from 0.4% to 121.9% with the highest percentage differences being the sections of US 20 near Rexburg and the sections of SH 33 south of Victor.

The count-based forecasts used in the comparison were derived by taking the average increment of traffic over the past six years and extrapolating that linear growth to 2027. Count-based forecasts were also developed using an average annual compound growth rate which produces higher estimates. The two estimates were developed to provide a range for the forecasts. Where the model-based forecasts in the comparison tables are higher than the count-based forecasts, they have been used as the baseline forecast for assessment of future needs. The percentage difference between the count-based linear forecast and the count-based compound growth rate forecast was used to develop an upper estimate for a range where the model–based forecast was used. The estimated range of volumes for AADT and DDV is presented in **Table 11** for US 20, **Table 12** for US 26 and in **Table 13** for SH 33.

Traffic turning movement counts wee also collected for 43 key intersections along the three corridors during the week of July 7-11, 2008. These counts were used as the basis for estimating existing and future level of service at the intersections. Future turning movement volumes will be estimated by extrapolating the approach volumes on the state routes using the estimates of growth in **Table 11-13** and then by extrapolating the approach volumes on the side streets using the forecasts from the local models. The turning-movement counts and forecasts will be stored in the node files of the GIS system and forecasting tool.

Table 8 Comparison of Count-Based and Model-Based Traffic Forecasts for US 20

Highway Section					No. of	2006	Count-Based	Model-Based	2027 Forecasts		%
Begin MP	End MP	Area	From	To	Lanes	AADT	Growth Rate	Growth Rate	Count-Based	Model Based	Diff.
Bonneville County											
307.45	307.63	Idaho Falls	SATURN AV	I-15 NB OFF RMP	4	24,000	2.25%	2.01%	35,340	34,154	3.5%
307.63	307.82	Idaho Falls	I-15 NB OFF RMP	IC# 307	4	23,000	2.25%	1.18%	33,868	28,705	18.0%
307.82	308.32	Idaho Falls	IC# 307	IC# 308	4	30,215	2.25%	1.27%	44,491	38,254	16.3%
308.32	308.5	Idaho Falls	IC# 308	IC# 309	4	25,000	2.25%	1.37%	36,813	32,216	14.3%
308.5	309.88	Idaho Falls	IC# 309	LEWISVILLE HWY	4	15,000	2.25%	1.00%	22,088	18,164	21.6%
309.88	310.13	Northeast of Idaho Falls	LEWISVILLE HWY	IC# 310	4	17,000	2.25%	1.07%	25,033	20,830	20.2%
310.13	311.05	Northeast of Idaho Falls	IC# 310	TELEFORD RD (49TH N)	4	17,089	2.25%	1.90%	25,170	23,925	5.2%
311.05	311.33	Northeast of Idaho Falls	TELEFORD RD (49TH N)	ST LEON RD (15TH E)	4	17,000	2.25%	1.83%	25,033	23,518	6.4%
311.33	313.39	Southwest of Iona	ST LEON RD (15TH E)	HITT RD (25TH E)	4	18,000	2.25%	1.33%	26,505	23,040	15.0%
313.39	314.51	Near Ucon	HITT RD (25TH E)	FAIRVIEW RD (97TH N)	4	20,000	2.25%	1.69%	29,450	27,092	8.7%
314.51	315.23	Near Ucon	FAIRVIEW RD (97TH N)	SH-43	4	20,000	2.25%	1.69%	29,450	27,092	8.7%
315.23	317.91	Northeast of Ucon	SH-43	IC# 318	4	19,000	2.25%	1.88%	27,978	26,494	5.6%
Madison County											
326.22	326.81	Near Lorenzo	NA	4300 W RD (NELSON	4	19,000	4.30%	4.51%	36,157	36,982	-2.2%
326.81	328.23	Near Thornton	4300 W RD (NELSON	THORNTON RD (4985S)	4	16,000	4.30%	2.28%	30,448	23,668	28.6%
328.23	329.67	Near Thornton	THORNTON RD (4985S)	BURTON RD (3800S)	4	16,000	4.30%	1.02%	30,448	19,439	56.6%
329.67	331.43	Southwest of Rexburg	BURTON RD (3800S)	NA	4	16,000	4.30%	0.93%	30,448	19,132	59.1%
331.43	331.94	Rexburg	NA	ACCESS RD	4	16,000	4.30%	0.93%	30,448	19,132	59.1%
331.94	333.44	Rexburg	ACCESS RD	SH-33	4	13,000	4.30%	0.50%	24,739	14,361	72.3%
333.44	334.44	Rexburg	SH-33	NA	4	11,000	4.30%	0.00%	20,933	11,000	90.3%
334.44	336.85	Rexburg	NA	FAS 6770	4	11,000	4.30%	0.00%	20,933	11,000	90.3%
336.85	338.26	Near Sugar City	FAS 6770	CENTER ST	4	12,000	0.90%	1.48%	14,268	15,718	-9.2%
338.26	338.93	Near Sugar City	CENTER ST	4000 NORTH RD	4	11,000	0.90%	2.39%	13,079	16,528	-20.9%
338.93	340.22	Northeast of Sugar City	4000 NORTH RD	NA	4	9,600	0.90%	3.37%	11,414	16,402	-30.4%

Table 9 Comparison of Count-Based and Model-Based Traffic Forecasts for US 26

Highway Section					No. of	2006	Count-Based	Model-Based	2027 Forecasts		%
Begin MP	End MP	Area	From	To	Lanes	AADT	Growth Rate	Growth Rate	Count-Based	Model Based	Diff.
Bonneville County											
338.24	339.55	Northeast of Iona	JCT SH-43	CROWLEY RD (45TH E)	2	7,900	3.82%	1.31%	14,237	10,065	41.4%
339.55	342.24	Northeast of Iona	CROWLEY RD (45TH E)	70TH E RD	2	7,900	3.82%	1.67%	14,237	10,662	33.5%
342.24	343.46	Northeast of Iona	70TH E RD	MILO RD (75TH E)	2	7,000	3.82%	1.55%	12,615	9,280	35.9%
343.46	344.61	Northeast of Iona	MILO RD (75TH E)	E MILO RD (85TH E)	2	6,200	3.82%	1.60%	11,174	8,284	34.9%
344.61	346.28	Southwest of Ririe	E MILO RD (85TH E)	FERGUSON RD	2	6,000	3.82%	1.53%	10,813	7,922	36.5%
346.28	346.79	Southwest of Ririe	FERGUSON RD	SHELTON RD (105TH E	2	5,800	3.82%	1.59%	10,453	7,733	35.2%
346.79	347.79	Southwest of Ririe	SHELTON RD (105TH E)	JOHNSON RD (115TH E	2	5,700	3.82%	1.59%	10,273	7,600	35.2%
347.79	348.73	Southwest of Ririe	JOHNSON RD (115TH E)	129TH N RD	2	3,000	2.81%	2.15%	4,770	4,353	9.6%
348.73	349.29	Southwest of Ririe	129TH N RD	JCT US-26B	2	4,200	2.81%	2.15%	6,678	6,094	9.6%

Table 10 Comparison of Count-Based and Model-Based Traffic Forecasts for SH 33

Highway Section					No. of	2006	Count-Based	Model-Based	2027 Forecasts		%
MP	End MP	Area	From	To	Lanes	AADT	Growth Rate	Growth Rate	Count-Based	Model Based	Diff.
Madison County											
100.00	101.03	Northest of Sugar City	JCT SH-33	3000 E RD	2	3,500	0.48%	3.25%	3,852	5,889	-34.6%
101.03	102.78	Northest of Sugar City	3000 E RD	00N RD RT	2	2,900	0.48%	3.25%	3,192	4,879	-34.6%
102.78	103.07	West of Teton	00N RD RT	2400 E RD	2	2,500	0.48%	3.25%	2,752	4,206	-34.6%
103.07	104.08	Teton	2400 E RD	2500E RD	2	3,000	0.48%	1.61%	3,302	4,014	-17.7%
104.08	106.10	East of Teton	2500E RD	N8000 E RD & N2700 E RD	2	2,600	0.48%	1.61%	2,862	3,479	-17.7%
106.10	106.60	West of Newdale	N8000 E RD & N2700 E RD	FIRST ST WEST	2	2,300	0.48%	2.85%	2,532	3,677	-31.2%
106.60	115.10	Newdale	FIRST ST WEST	NA	2	2,202	1.61%	1.44%	2,948	2,868	2.8%
115.10	115.70	East of Newdale	NA	CANYON CREEK RD (17000 E	2	2,200	1.61%	1.59%	2,945	2,933	0.4%
115.70	115.80	East of Newdale	CANYON CREEK RD (17000 E	NA	2	1,700	1.61%	1.56%	2,276	2,255	0.9%
115.80	118.25	East of Newdale	NA	COUNTY LINE	2	1,700	1.61%	1.56%	2,276	2,258	0.8%
TetonCounty											
118.25	131.07	West of SH 32	COUNTY LINE	JCT SH-32	2	1,700	1.61%	2.31%	2,276	2,523	-9.8%
131.07	132.90	North of Tetonia	JCT SH-32	MAIN ST	2	2,500	1.92%	1.63%	3,510	3,358	4.5%
132.90	135.50	East of Tetonia	MAIN ST	BALER RD (50W)	2	2,400	1.92%	1.27%	3,369	3,040	10.8%
135.50	137.27	North of Driggs	BALER RD (50W)	400N	2	2,500	1.92%	1.79%	3,510	3,439	2.0%
137.27	140.89	North Side of Driggs	400N	MAIN ST & HARPER AVE	2	5,100	4.27%	2.97%	9,674	8,283	16.8%
140.89	141.79	Driggs	MAIN ST & HARPER AVE	50S RD	2	6,400	4.27%	2.25%	12,140	9,422	28.8%
141.79	142.03	Soouth Side of Driggs	50S RD	BATES RD (200S)	2	5,100	4.27%	2.81%	9,674	8,109	19.3%
142.03	143.29	South of Driggs	BATES RD (200S)	DARBY RD (200S)	2	5,100	4.27%	2.95%	9,674	8,255	17.2%
143.29	144.30	North of Fox Creek	DARBY RD (200S)	300S	2	5,100	4.27%	3.12%	9,674	8,437	14.7%
144.30	149.33	Fox Creek and Chapin	300S	CEDRON RD	2	6,200	5.88%	2.30%	13,860	9,194	50.7%
149.33	149.62	North Side of Victor	CEDRON RD	JCT SH-31	2	6,400	5.88%	1.95%	14,307	9,023	58.6%
149.62	149.98	South Side of Victor	JCT SH-31	50W RD	2	5,400	5.88%	2.05%	12,072	7,724	56.3%
149.98	150.70	SE of Victor	50W RD	S BASELINE RD & 00 W RD	2	4,100	5.88%	0.03%	9,166	4,130	121.9%
150.70	155.08	Near Wyoming Border	S BASELINE RD & 00 W RD	IDAHO/WYOMING STATE LIN	2	4,211	3.55%	0.09%	7,347	4,294	71.1%

Table 11 Estimated Range of Forecasts for AADT and Design Day Volumes for US 20

Highway Section								2027 AADT		2027 DDV	
Begin MP	End MP	Area	From	To	No. of Lanes	2006 AADT	2006 DDV	Linear Growth	Compound Growth	Linear Growth	Compound Growth
Bonneville County											
307.45	307.63	Idaho Falls	SATURN AV	I-15 NB OFF RMP	4	24,000	26,530	35,340	38,295	39,065	42,332
307.63	307.82	Idaho Falls	I-15 NB OFF RMP	IC# 307	4	23,000	25,440	33,868	36,699	37,460	40,593
307.82	308.32	Idaho Falls	IC# 307	IC# 308	4	30,215	31,990	44,491	48,211	47,105	51,044
308.32	308.5	Idaho Falls	IC# 308	IC# 309	4	25,000	27,620	36,813	39,891	40,670	44,071
308.5	309.88	Idaho Falls	IC# 309	LEWISVILLE HWY	4	15,000	16,700	22,088	23,934	24,591	26,647
309.88	310.13	Northeast of Idaho Falls	LEWISVILLE HWY	IC# 310	4	17,000	18,890	25,033	27,126	27,816	30,141
310.13	311.05	Northeast of Idaho Falls	IC# 310	TELEFORD RD (49TH N)	4	17,089	18,890	25,170	27,277	27,822	30,152
311.05	311.33	Northeast of Idaho Falls	TELEFORD RD (49TH N)	ST LEON RD (15TH E)	4	17,000	18,890	25,033	27,126	27,816	30,141
311.33	313.39	Southwest of Iona	ST LEON RD (15TH E)	HITT RD (25TH E)	4	18,000	19,980	26,505	28,721	29,421	31,881
313.39	314.51	Near Ucon	HITT RD (25TH E)	FAIRVIEW RD (97TH N)	4	20,000	22,160	29,450	31,912	32,631	35,359
314.51	315.23	Near Ucon	FAIRVIEW RD (97TH N)	SH-43	4	20,000	22,160	29,450	31,912	32,631	35,359
315.23	317.91	Northeast of Ucon	SH-43	IC# 318	4	19,000	21,070	27,978	30,317	31,026	33,620
Madison County											
326.22	326.81	Near Lorenzo	NA	4300 W RD (NELSON RD)	4	19,000	21,070	36,982	47,046	41,011	52,172
326.81	328.23	Near Thornton	4300 W RD (NELSON RD)	THORNTON RD (4985S)	4	16,000	17,800	30,448	38,734	33,873	43,091
328.23	329.67	Near Thornton	THORNTON RD (4985S)	BURTON RD (3800S)	4	16,000	17,800	30,448	38,734	33,873	43,091
329.67	331.43	Southwest of Rexburg	BURTON RD (3800S)	NA	4	16,000	17,800	30,448	38,734	33,873	43,091
331.43	331.94	Rexburg	NA	ACCESS RD	4	16,000	17,800	30,448	38,734	33,873	43,091
331.94	333.44	Rexburg	ACCESS RD	SH-33	4	13,000	14,520	24,739	31,471	27,632	35,151
333.44	334.44	Rexburg	SH-33	NA	4	11,000	12,340	20,933	26,630	23,483	29,873
334.44	336.85	Rexburg	NA	FAS 6770	4	11,000	12,340	20,933	26,630	23,483	29,873
336.85	338.26	Near Sugar City	FAS 6770	CENTER ST	4	12,000	13,430	15,718	15,957	17,591	17,858
338.26	338.93	Near Sugar City	CENTER ST	4000 NORTH RD	4	11,000	12,340	16,528	16,778	18,541	18,822
338.93	340.22	Northeast of Sugar City	4000 NORTH RD	NA	4	9,600	10,810	16,402	16,651	18,470	18,750

Table 12 Estimated Range of Forecasts for AADT and Design Day Volumes for US 26

Highway Section								2027 AADT		2027 DDV	
Begin MP	End MP	Area	From	To	No. of Lanes	2006 AADT	2006 DDV	Linear Growth	Compound Growth	Linear Growth	Compound Growth
Bonneville County											
338.24	339.55	Northeast of Iona	JCT SH-43	CROWLEY RD (45TH E)	2	7,900	8,540	14,237	17,358	15,390	18,765
339.55	342.24	Northeast of Iona	CROWLEY RD (45TH E)	70TH E RD	2	7,900	8,540	14,237	17,358	15,390	18,765
342.24	343.46	Northeast of Iona	70TH E RD	MILO RD (75TH E)	2	7,000	7,560	12,615	15,381	13,624	16,611
343.46	344.61	Northeast of Iona	MILO RD (75TH E)	E MILO RD (85TH E)	2	6,200	6,680	11,174	13,624	12,039	14,679
344.61	346.28	Southwest of Ririe	E MILO RD (85TH E)	FERGUSON RD	2	6,000	6,460	10,813	13,184	11,642	14,194
346.28	346.79	Southwest of Ririe	FERGUSON RD	SHELTON RD (105TH E)	2	5,800	6,240	10,453	12,745	11,246	13,712
346.79	347.79	Southwest of Ririe	SHELTON RD (105TH E)	JOHNSON RD (115TH E)	2	5,700	6,130	10,273	12,526	11,048	13,471
347.79	348.73	Southwest of Ririe	JOHNSON RD (115TH E)	129TH N RD	2	3,000	3,160	4,770	5,368	5,024	5,654
348.73	349.29	Southwest of Ririe	129TH N RD	JCT US-26B	2	4,200	4,480	6,678	7,515	7,123	8,016

Table 13 Estimated Range of Forecasts for AADT and Design Day Volumes for SH 33

Highway Section		Area	From	To	No. of Lanes	2006 AADT	2006 DDV	2027 AADT		2027 DDV	
Begin MP	End MP							Linear Growth	Compound Growth	Linear Growth	Compound Growth
Madison County											
100.00	101.03	Northest of Sugar City	JCT SH-33	3000 E RD	2	3,500	4,150	5,889	5,915	6,982	7,014
101.03	102.78	Northest of Sugar City	3000 E RD	00N RD RT	2	2,900	3,490	4,879	4,901	5,872	5,899
102.78	103.07	West of Teton	00N RD RT	2400 E RD	2	2,500	3,050	4,206	4,225	5,132	5,155
103.07	104.08	Teton	2400 E RD	2500E RD	2	3,000	3,410	4,014	4,032	4,563	4,584
104.08	106.10	East of Teton	2500E RD	N8000 E RD & N2700 E RD	2	2,600	3,160	3,479	3,495	4,228	4,248
106.10	106.60	West of Newdale	N8000 E RD & N2700 E RD	FIRST ST WEST	2	2,300	2,840	3,677	3,694	4,541	4,561
106.60	115.10	Newdale	FIRST ST WEST	NA	2	2,202	2,730	2,948	3,081	3,655	3,820
115.10	115.70	East of Newdale	NA	CANYON CREEK RD (17000 E)	2	2,200	2,730	2,945	3,079	3,655	3,820
115.70	115.80	East of Newdale	CANYON CREEK RD (17000 E)	NA	2	1,700	2,180	2,276	2,379	2,918	3,051
115.80	118.25	East of Newdale	NA	COUNTY LINE	2	1,700	2,180	2,276	2,379	2,918	3,051
TetonCounty											
118.25	131.07	West of SH 32	COUNTY LINE	JCT SH-32	2	1,700	2,180	2,523	2,637	3,235	3,382
131.07	132.90	North of Tetonia	JCT SH-32	MAIN ST	2	2,500	3,050	3,510	3,730	4,282	4,550
132.90	135.50	East of Tetonia	MAIN ST	BALER RD (50W)	2	2,400	2,940	3,369	3,580	4,127	4,386
135.50	137.27	North of Driggs	BALER RD (50W)	400N	2	2,500	3,050	3,510	3,730	4,282	4,550
137.27	140.89	North Side of Driggs	400N	MAIN ST & HARPER AVE	2	5,100	5,890	9,674	12,273	11,172	14,174
140.89	141.79	Driggs	MAIN ST & HARPER AVE	50S RD	2	6,400	7,310	12,140	15,402	13,866	17,592
141.79	142.03	Soouth Side of Driggs	50S RD	BATES RD (200S)	2	5,100	5,890	9,674	12,273	11,172	14,174
142.03	143.29	South of Driggs	BATES RD (200S)	DARBY RD (200S)	2	5,100	5,890	9,674	12,273	11,172	14,174
143.29	144.30	North of Fox Creek	DARBY RD (200S)	300S	2	5,100	5,890	9,674	12,273	11,172	14,174
144.30	149.33	Fox Creek and Chapin	300S	CEDRON RD	2	6,200	7,090	13,860	20,596	15,850	23,553
149.33	149.62	North Side of Victor	CEDRON RD	JCT SH-31	2	6,400	7,310	14,307	21,261	16,342	24,284
149.62	149.98	South Side of Victor	JCT SH-31	50W RD	2	5,400	6,220	12,072	17,939	13,905	20,663
149.98	150.70	SE of Victor	50W RD	S BASELINE RD & 00 W RD	2	4,100	7,960	9,166	13,620	17,795	26,443
150.70	155.08	Near Wyoming Border	S BASELINE RD & 00 W RD	IDAHO/WYOMING STATE LINE	2	4,211	8,150	7,347	8,754	14,220	16,943

4 Recommendations to Improve Travel Forecasting

The forecasts of travel described in this memorandum have relied heavily on traffic counts conducted by ITD and travel forecasting models developed by or for local jurisdictions. The data and tools available for this effort have been adequate to produce reasonable estimates of traffic volumes for the purpose of refreshing the corridor plans, but better forecasts could be produced in the future if additional resources can be devoted to data collection, data management and potentially new model development. The foundation of forecasting in this project has been the short-term counts conducted periodically on segments of the state highway. The short-term counts provide comprehensive coverage of the state system, but do not provide information about variation in travel by day of the week, or season of the year. A few permanent count locations (ATR stations) are relied on to produce profiles of travel over a year that can be used to seasonally adjust the Short-Term Counts to produce estimates of design hour volumes or volumes for any other hour during the year. For the corridor plan refreshes, five ATR locations were used to provide profile information for over 173 miles of roadway. Each of the corridors was divided into segments to reflect parts of the corridor that have similar characteristics. There were seventeen segments over the three corridors, and ITD might consider eventually representing each segment with an ATR location.

The mix of vehicle types on state routes in eastern Idaho directly affects the health of the corridor - both positively and negatively. A mix of bicycles, passenger cars, buses, recreational vehicles, farm equipment and trucks can reflect a healthy multi-use corridor that supports daily travel by area residents, recreational travel, mobility for transit dependents, farming and goods movement. But the conflicts that can arise from these vehicles of different size, weight, and operational characteristics can also affect the other dimensions of health – level-of-service, safety, ride quality – if provisions are not made for accommodating the mix of vehicles. When there is a mix of vehicle types, the need for wider paved shoulders, pull-out lanes, passing lanes, turn or possibly even multiple through lanes increases. Unfortunately, very little information is available on the mix of vehicles on different segments of the state routes and how the mix varies by time of day, day of the week or season of the year. Estimates of the percentage of trucks in the AADT are developed based on data collected from weigh-in-motion (WIM) systems that continuously characterize the volume by vehicle size. There is only one WIM system on the three corridors evaluated in this effort (on US 20 in Rigby) and only three in District 6. Each major corridor should have at least one WIM system and these should be supplemented with periodic vehicle classification counts to assess the full spectrum of vehicles using the various segments of the state system. Vehicle classification counts should be conducted annually on each segment of each state route during the peak travel season and should cover at least the peak periods. Whenever possible, speed data by vehicle type should also be collected with the classification counts.

Finally, the modeling of travel could be improved by devoting more resources to local modeling and by acquiring origin-destination data to assess the distribution of trips within a model area and the proportion of trips that travel between model areas. Some standardization of the models within the District could increase the collaboration and lower the cost of model upkeep. This could include the use of the same modeling software, use of a compatible zone system and network configuration, use of the same baseline and forecast years, and use of a common set of model parameters such as trip generation rates. These steps could increase the benefit of collaboration on model enhancement and could provide the framework for an eventual District-wide model system. New population, household, and commute travel data will be available from the 2010 census by 2012 or 2013 and that may be an appropriate time to move toward a District-wide model to support the next round of corridor plan refreshes.

APPENDIX B

Technical Memorandum

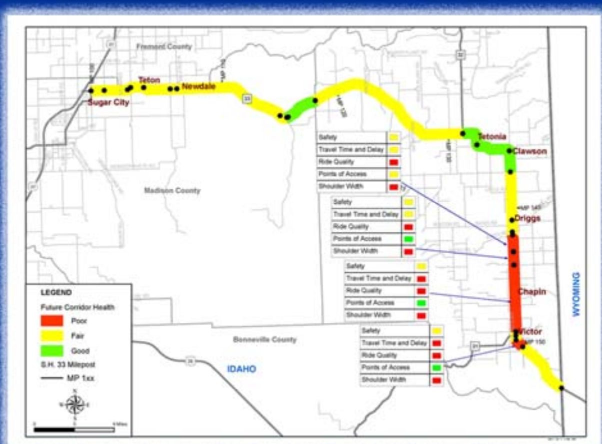
US 20, US 26 and SH 33 Corridor Plan Refreshes

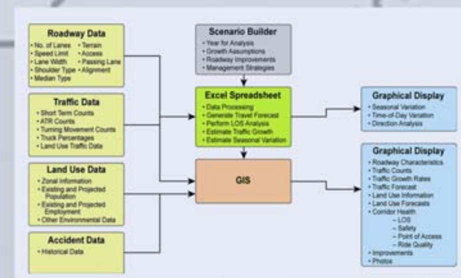
Corridor Health Visualization Tools

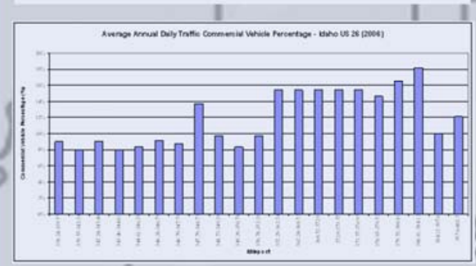
TECHNICAL MEMORANDUM

U.S. 20, U.S. 26, and S.H. 33 Corridor Plan Refreshes

Corridor Health Visualization Tools







PREPARED FOR:

Idaho Transportation Dept.
District 6

PREPARED BY:

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August 2008

Technical Memorandum

US 20, US 26 and SH 33 Corridor Plan Refreshes

Corridor Health Visualization Tool

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Contents

Overview

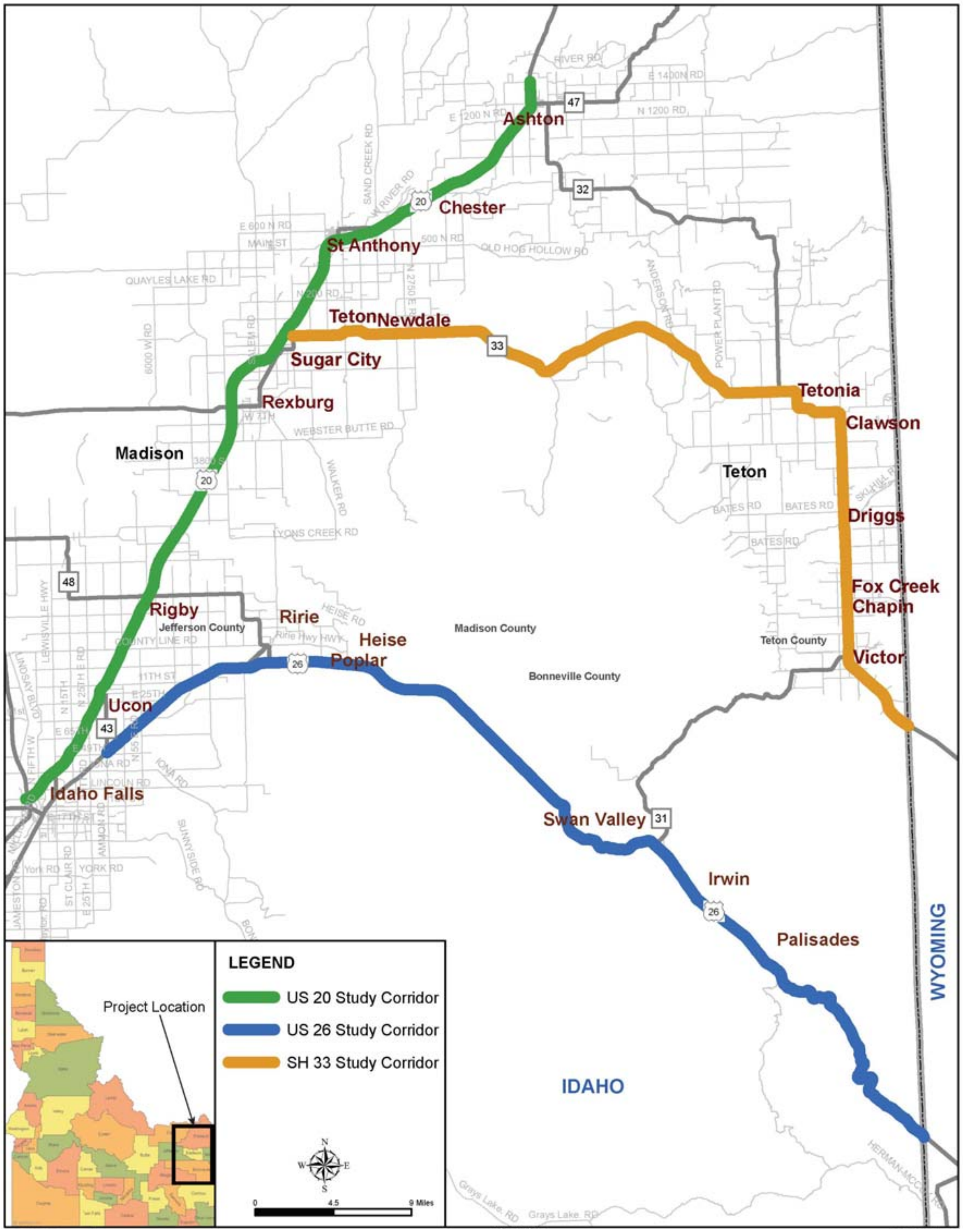
Eastern Idaho is one of the premier destinations for recreational travel in the western United States. The region attracts millions of visitors each year for fishing, hunting, boating, skiing, snowmobiling, camping, backpacking, hiking and visiting the national parks in neighboring Montana and Wyoming. The state roads that provide access to these recreational areas are also the only routes of access to the rich farm lands that produce a variety of crops including the potatoes for which Idaho is famous. An unprecedented growth in Idaho in the past twenty years has raised concerns that urbanization of segments along the state routes that serve the recreational and agricultural areas and ever increasing vehicle miles traveled are resulting in conflicts that are degrading both the level of service and the safety on the roads. This technical memorandum describes a "Visualization Tool" developed by the Idaho Transportation Department (ITD) and DKS Associates to produce a computerized data management system and visual displays of how growth in the key corridors will affect the future "health" of the state highway system and how investments can reduce the long-term impacts of the growth. The tool was initially developed for use in updating corridor plans for US 20, US 26 and SH 33 in District 6 of ITD the locations of which are illustrated in **Figure 1**.

The Visualization Tool is designed to house and manage the data called upon for corridor planning in Idaho as defined by the ***Idaho Corridor Planning Guidebook*** **(1)** developed when ITD began the process of corridor planning in the late 1990s. This included the following:

- Roadway inventory data
- Traffic count, vehicle classification, turning movements and speed data
- Traffic accident data
- Traffic forecast data
- Land use data – population and employment
- Land use forecasts

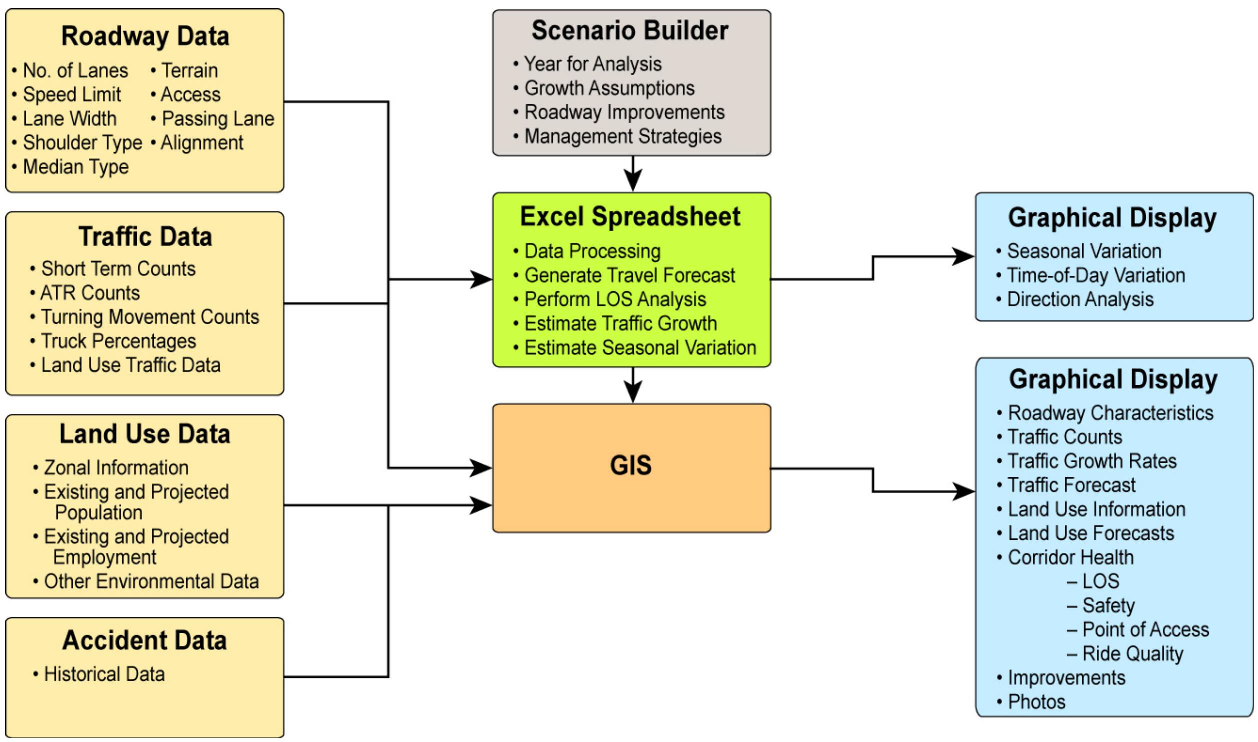
The Visualization Tool also provides the data for "low volume corridors" that do not meet the state's criteria for a full-scale corridor plan but for which a strategic plan is needed **(2)**. ITD has also endorsed a context-sensitive approach to transportation solutions that emphasizes the development of cost-effective transportation systems that are safe, reliable and responsive for the economical and efficient movement of people and products, but that also reflect the nature of the environment in which they are to operate and the vision of the communities served by the facility **(3)**. Development of context-sensitive solutions requires greater information about the corridor in which the state routes operate, and the Visualization Tool has been designed to provide this additional information in an easily accessible and intuitively meaningful format.

Figure 1 Location of US 20, US 26 and SH 33 Corridors in ITD District 6



As indicated in **Figure 2**, the system includes a Geographic Information System (GIS) as the base platform where a variety of data on roadway characteristics, land use, population and employment forecasts, and traffic counts are stored and organized. GIS has several strengths particularly useful for this purpose, not the least of which is the transparency and ease of access to the data by ITD's transportation planning partners.

Figure 2 Visualization Tool Flow Chart



The system includes a module for producing travel forecasts from population and employment growth forecasts and from historical traffic growth trends to reflect growth in the corridor and growth in recreational travel to the region. Common characteristics of most of the routes in District 6 of Idaho are significant variations in travel by month of the year, by day of the week within a month and by hour of the day. Traffic on the state routes tends to be heavily peaked in the summer months when there is a significant increase in recreational travel. The forecasting system uses the annual distribution of traffic from available data to provide an estimate of traffic volume for any season or day of the week.

The Visualization Tool is similar in structure to a GIS database developed for the Maricopa Association of Governments (MAG); which included a linear referencing system, temporal segmentation, and an inventory of planned improvements based on the MAG travel model network **(4)**. With linkage to the MAG travel model, the GIS database could provide travel forecasts, turning movements and level of service calculations used to help identify the need for improvements. DKS and ITD captured much of this same functionality in the design of the Visualization Tool.

For any future scenario, the ITD Visualization Tool can generate a graphic display of the "health" of the corridor, where health is defined by a set of factors and criteria that describe how the corridor would be perceived by travelers that use it and how the roadway facility affects the economic health of the corridor. During this time of intense interest in transportation funding and the question "Is it enough?" the ability to model various scenarios and display the results of that model in a graphic form for quick ease of understanding and comparison is critical to influencing community leaders and lawmakers. The system displays forecasted information, but also flags segments of concern. This allows discussions over regional needs to flow seamlessly into consideration of specific impacts to local areas.

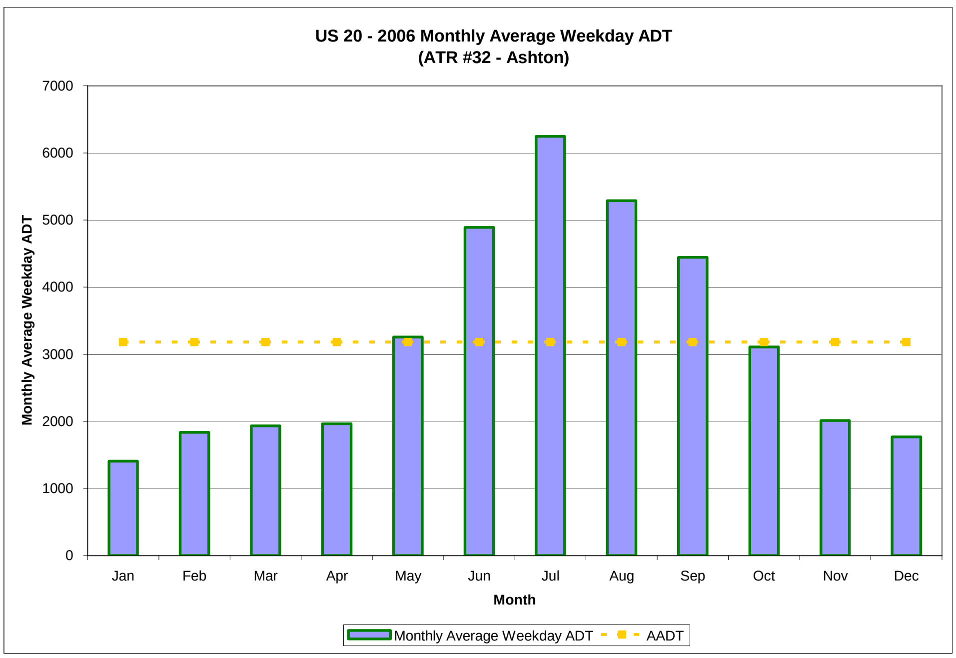
All of the input data that support the Visualization Tool can all be graphically displayed, and comparisons of different scenarios can be displayed graphically as well. For example, the basic characteristics of the roadway such as the number of lanes can be displayed as indicated in **Figure 3**. The Visualization Tool also serves as a photographic inventory that can use recent photos to illustrate issues affecting the health of the corridor. As an example, **Figure 3** also provides a photograph that illustrates the transition from two lanes to four lanes on US 20 near St. Anthony.

Figure 3 Number of Travel Lanes on US 20 Corridor

Variation in Traffic Volumes by Season, Day of the Week and Hour

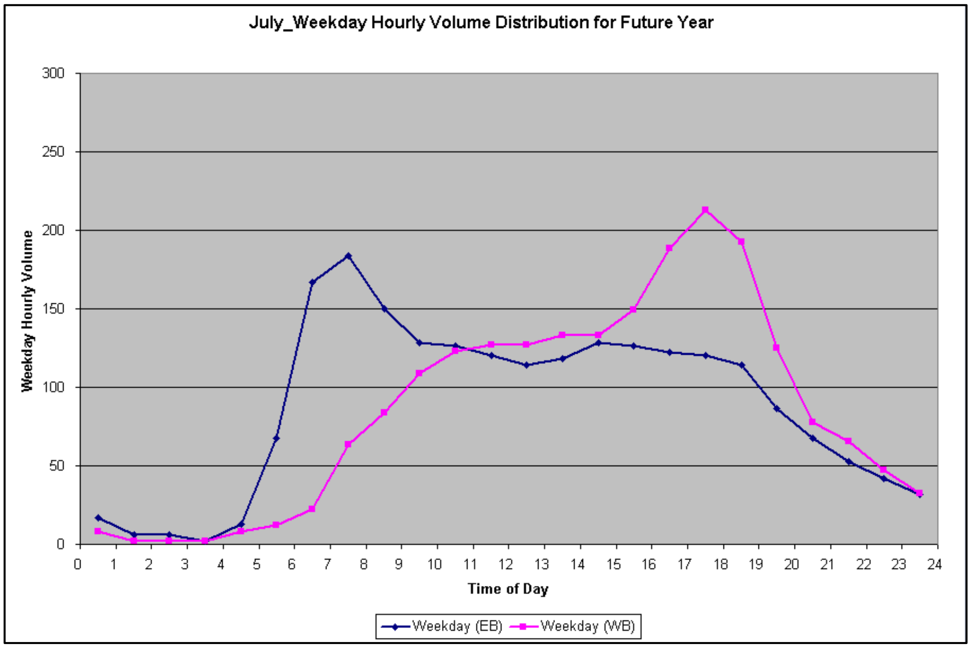
As previously indicated, there is significant variation in District 6 in travel by month of the year, by day of the week within a month and by hour of the day. Traffic on the state routes tends to be heavily peaked in the summer months when there is a significant increase in recreational travel. When there is a significant amount of recreational travel there is a generally peaking of travel on the weekends. The forecasting system uses the annual distribution of traffic from the nearest automatic traffic recorder (ATR) to provide a month-by-month forecast for the segment of interest for the future year specified. A sample distribution of ADT by month is provided in **Figure 4**. In this sample from ATR #32 on US 20 in Aston, the average weekday volume for July is over three times the average for January or February.

Figure 4 Sample Distribution of ADT by Month



Similarly, an hourly distribution of traffic volumes can also be developed for a segment for the forecast-year volume as indicated in **Figure 5**.

Figure 5 Sample Distribution of Traffic by Hour and by Direction



The South Dakota Department of Transportation in 2008 conducted a review of alternative methods for developing travel forecasts for rural roadways **(5)**. The research examined the travel forecasting methodology used in South Dakota and compared it to approaches used in Arizona, Colorado, Idaho, Iowa, Minnesota, Montana, Missouri, Nebraska, North Dakota, New Mexico, Wisconsin and Wyoming. Their research considered the method proposed for ITD District 6 to be one of the more cost-effective methods for developing forecasts to support needs assessment and planning for the state highway system. The researchers concluded that the development of interregional or statewide models for forecasting state highway volumes could be difficult and expensive and required a significant commitment of budget and labor support. They felt that the use of local models, where available, supplemented with historic traffic counts and distribution information from the permanent count locations (the ATRs) represented a practical approach.

In 2001, researchers at the National Institute for Advanced Transportation Technology at the University of Idaho completed a statewide transportation planning project for Idaho that included the development of a statewide model **(6)**. While the researchers felt that the model performed reasonably well in validation tests, they recommended that the State continue to use projection of historical traffic counts as its basic forecasting method particularly for low-volume rural roads. For higher volume urban roads, the researchers recommended continued enhancement of the urban area models being developed by the metropolitan planning organizations (MPOs) and counties.

Defining the Health of a Corridor

U.S. Department of Transportation guidance for rural roadway planning **(7)** recommends the use of a multiple criteria analysis to prioritize projects and investments in rural areas. The Visualization Tool uses numerical scores to give the appropriate weight to each criterion as suggested by the USDOT guidance. The current health of a state corridor can be defined by a number of key factors, selected for usefulness in discussions over needed investments, the levels of those investments and the prioritization of investment in one place over another. For this exercise, the factors that are most visible to the users of the system are travel time, safety, ride quality, points of access and shoulder width. The mix of vehicle types on state routes in eastern Idaho also affects the health of the corridor - both positively and negatively, but these effects are captured in the other characteristics. A mix of bicycles, passenger cars, buses, recreational vehicles, farm equipment and trucks can reflect a healthy multi-use corridor that supports daily travel by area resident, recreational travel, mobility for transit dependents, farming activities and goods movement. But the conflicts that can arise from these vehicles of different size weight and speed can also affect the other dimension of health – level-of-service, safety, ride quality – if provisions are not made for accommodating the mix of vehicles. When there is a mix of vehicle types, the need for multiple lanes in each direction or at least passing lanes and turn lanes increases.

Any factor that can be represented in the system by quantitative measures can be reflected in the display of health, which allows planners to both establish a baseline standard across multiple counties and yet work with local emphasis or unusual circumstances. Health is a condition that is easily understood to change over time and adding rate of change factors across a roadway's lifecycle raises awareness that the initial investments have limited life unless further investment is made over the lifecycle. Furthermore, when considering the state highway system as inherited through a series of decisions made in isolation, defining the health of a particular branch of that system can reveal weaknesses and strengths in the functioning of the overall network, leading to better prioritization.

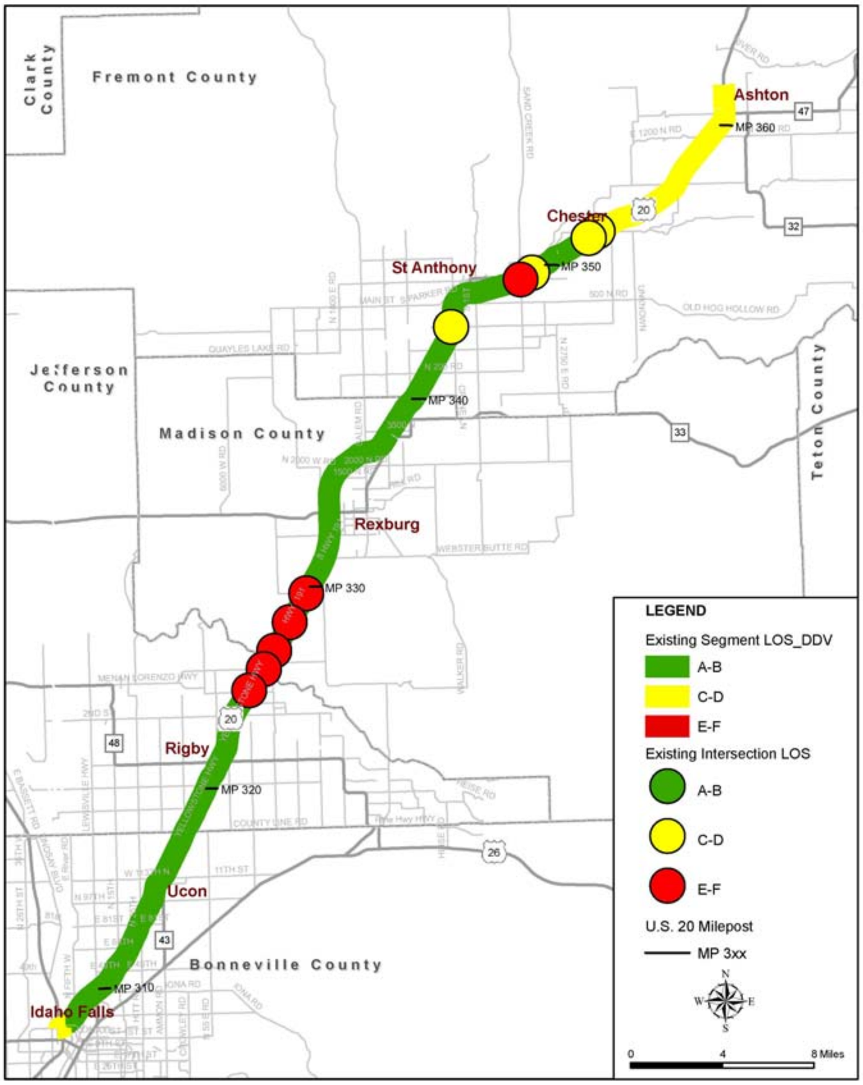
In a similar effort, Galehouse **(8)** used the concept of a "corridor health" to rate the pavement quality of a segment and its current or future need for maintenance or rehabilitation. Galehouse suggests that there is a tendency for many state DOTs to view their highway systems as simply a collection of projects and in doing so lose the opportunity for strategically managing entire roadway networks. Galehouse proposed a "quick checkup tool" based on an evaluation of reconstruction, rehabilitation, preservation needs to develop a "Remaining Service Life" measure. This measure provides an indication of the relative heath of the network from a pavement perspective. DKS has followed this concept, but in a much broader sense to capture the elements of overall corridor heath and need for improvements.

Travel Time and Delay

Well-established methods are available to assess the degree of delay that is likely to be experienced by roadway users under different levels of travel volume on the state route and on crossing routes and turning movements from one to the other. These methods produce a letter grade (A to F) for the level of service on the roadway and also an estimate of the average delay that a user is likely to experience. The level of service and average delay can be calculated for existing conditions based on traffic counts and for future conditions based on traffic forecasts and displayed graphically as in **Figure 6**.

The Federal Highway Administration (FHWA) Idaho Division Office has developed an approach for assessing current and future congestion within the corridor and identified LOS calculation methods that are appropriate to the context **(9)**. The recommended procedures apply different methods for two-lane uninterrupted flow segments, multi-lane unsignalized roads, signalized roads and freeways. The ITD Visualization Tool uses the recommended methods but has added a third method developed by the Florida Department of Transportation for two-lane unsignalized rural roads through small towns **(10)**.

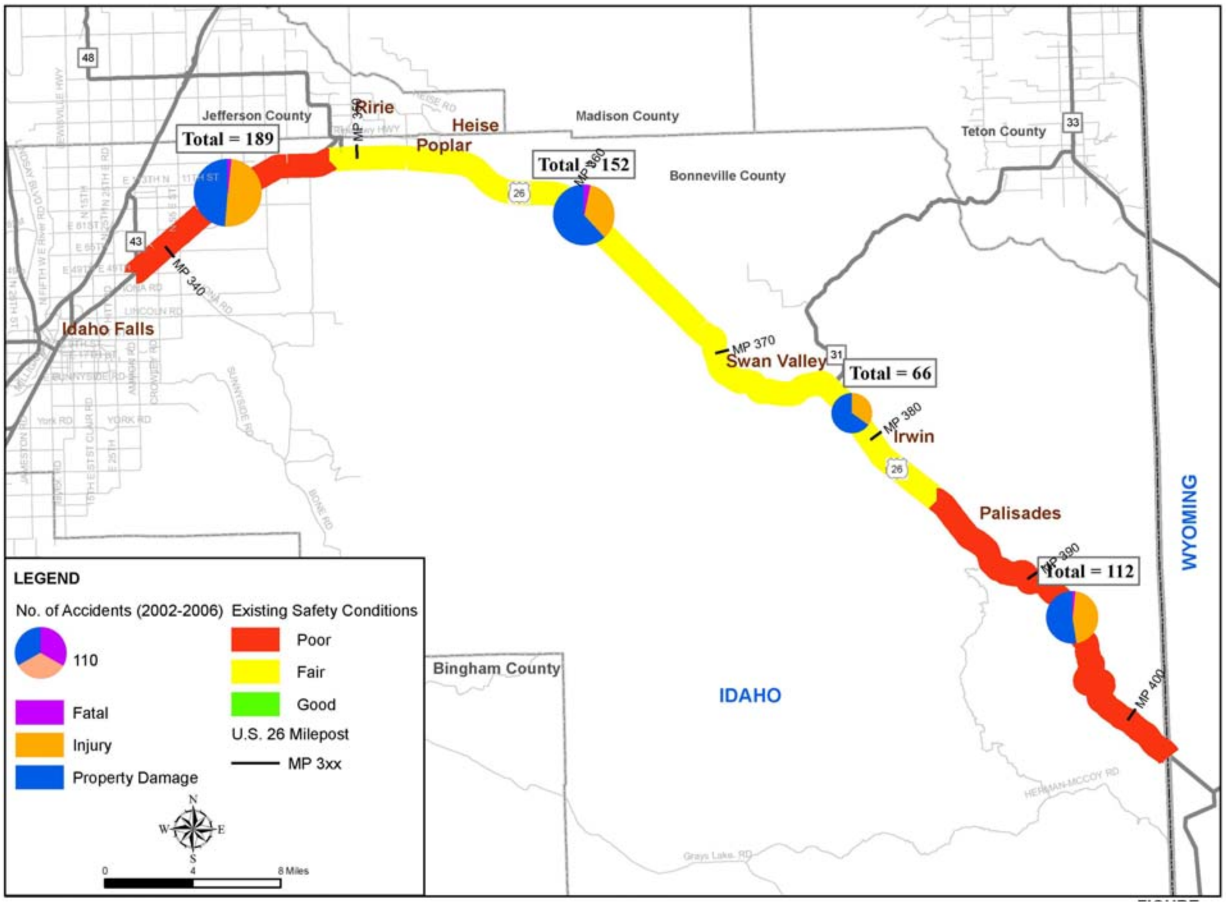
Figure 6 Existing Level of Service on US 20 Corridor



Safety

Safety can be quantified by the number of accidents of different types – property damage, injury and fatality. Accident statistics are generally reported for only existing conditions and reflect the actual number of accidents reported. Estimates of future accident levels can be developed based on the traffic volumes forecasted for the future and the characteristics of the roadway – number of lanes, provision of passing and/or turning lanes, number of at-grade intersections, etc. Accident rates in "number per million vehicle miles" can be developed by roadway type from existing state data. **Figure 7** illustrates the assessment of safety conditions along the US 26 corridor.

Figure 7 Assessment of Existing Safety Conditions on US 26 Corridor



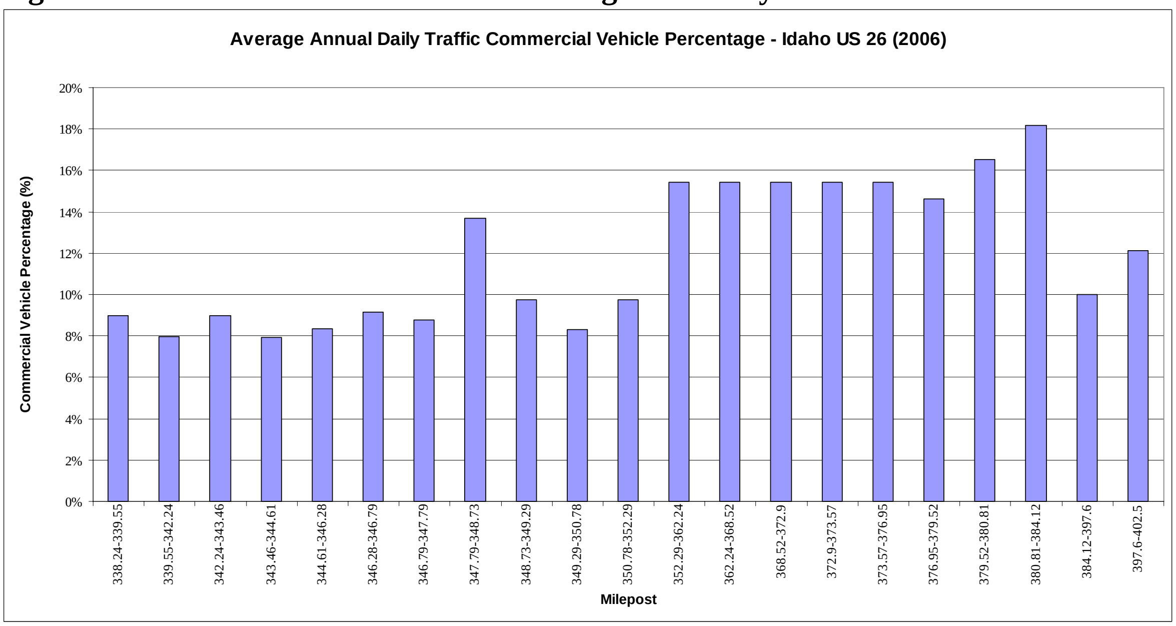
Ride Quality

Ride quality can be the result of several factors. The most frequently used factor is pavement quality, but can also include other roadway characteristics such as number of lanes, lane width, shoulder width, curvature and hilliness. Pavement condition affects the smoothness of the ride and the potential for vehicle damage from potholes or cracks. The other factors can represent safety problems or simply the traveler's comfort in using the roadway.

The Idaho Transportation Department classifies pavement condition as Good, Fair, Poor, or Very Poor based on a combination of two indices: the Cracking Index (CI) and the Roughness Index (RI). Both indices provide ratings for roadways segments between 0 and 5 based on the observed condition of the roadway. The Cracking Index (CI) gives a rating of a roadway surface's visual distress, while the Roughness Index (RI) is a rating of surface smoothness. The higher the CI and RI values, the better the roadway pavement condition. Pavement condition is tested on state routes in Idaho each year.

Pavement condition for future years can be predicted based on the proposed program for pavement maintenance and forecasts of travel by vehicle type for all years leading up to the forecast year. Pavement condition is affected by vehicle loads, but this is almost entirely a function of truck loads and not passenger car loads. The percentage of traffic volume on a segment that is trucks is also part of the data stored in the Visualization Tool, and a sample of that data is presented in **Figure 8**. Each vehicle type has a load factor that is applied to the forecasted volume for that vehicle type to estimate the load placed on the pavement. The condition of the pavement in a future year can then be predicted based on the cumulative load from all of the intervening years between the year in which the last pavement condition value was observed and the forecast year. Planned pavement maintenance also enters into the prediction of the future year condition.

Figure 8 2006 Commercial Vehicle Percentage Summary on US 26 Corridor



Points of Access

Access to a state route can also affect the health of the corridor. Too many points of access can affect the level-of service and the safety of the route. A major challenge for ITD in the preparation of the corridor plans is to support the local economy of small towns along the state routes or at the fringes of the urban areas, while also maintaining the appropriate function of the state route to facilitate the efficient movement of people, agricultural products and freight between population centers, farms and recreational opportunities. ITD has adopted access management practices in principle and is beginning to incorporate them into the long range planning for the corridors. ITD has developed access management policies but is looking to more advanced guidance such as those developed by the Center for Urban Transportation Research (CUTR) **(11)**. CUTR guidelines emphasize the need for good geographic data on roadway characteristics, land uses, land-use forecasts and local street network to be able to formulate appropriate access management principles for particular state routes in particular contexts.

Shoulder Width

Because of the multi-use nature of the corridor – commuting, school trips, recreation, tourism, farm transportation and freight movement - having adequate shoulders to accommodate non-motorized travel and to allow for stopping without impeding the travel lanes is an important concern in terms of safety and the travelers' experiences with the corridors. Shoulder width was evaluated on the basis of ITD and AASHTO guidelines for the appropriate widths given roadway functional classification and volume.

Overall Assessment of Corridor Health

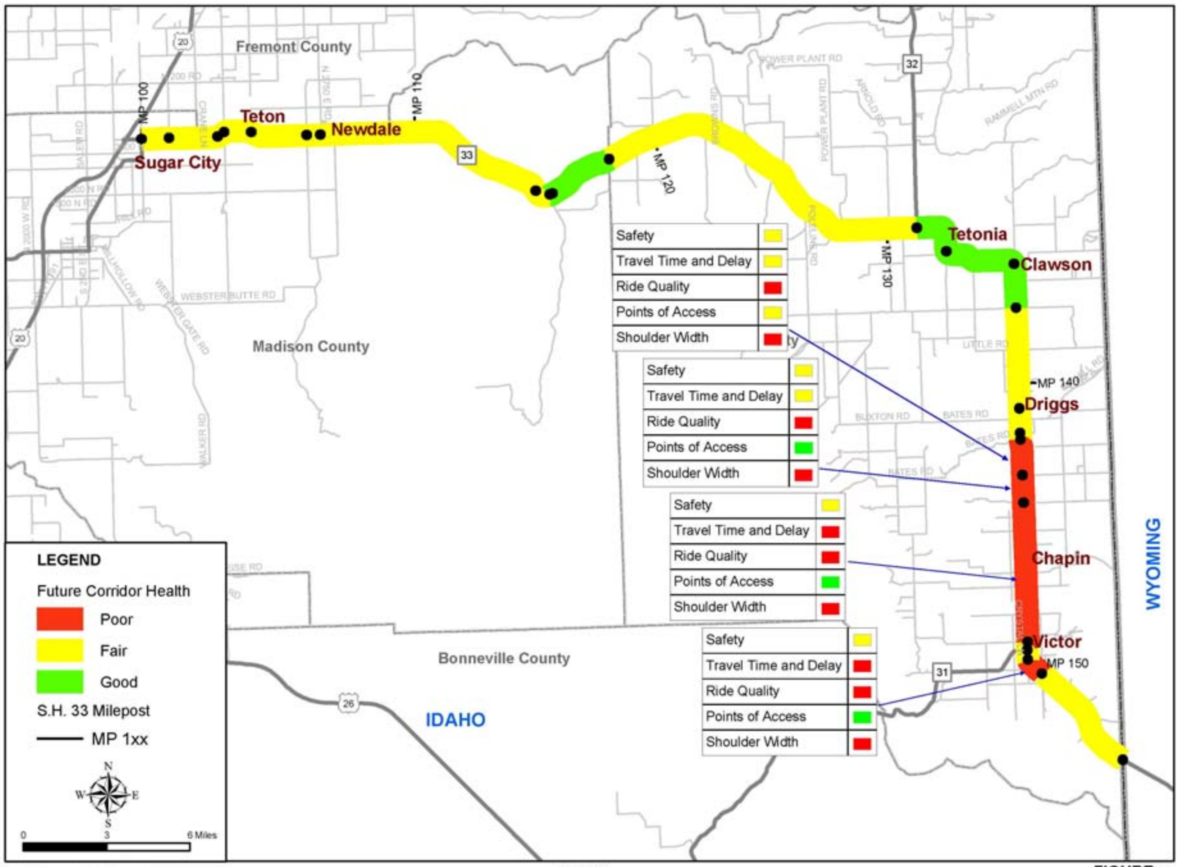
Because the overall heath of the corridor results from a combination of the characteristics described above and not just from one of them, a method is needed for combining the factors into a single measure. Developing such a single measure requires subjective judgment and should ultimately reflect the priorities of the residents of the corridors and those that use the facilities. For the application in District 6, DKS and ITD drew on the experience of DKS applying a similar prioritization system in District 5 to establish relative weights **(12)**. The resulting scoring system is illustrated in **Table 1**.

Table 1 Corridor Health Scoring System for ITD District 6

Factor	Weight	Factor Score
Safety	40%	=.35*(% of State VMT for Category with Fatal Accident Rate greater than the Segment)+.35*(% of State VMT for Category with Injury Accident Rate greater than the Segment)+.3*(% of State VMT for Category with Total Accident Rate greater than the Segment)
Travel Time and Delay	30%	1/LOS where LOS = .5 * (Link LOS for Average Peak Hour Conditions) + .2 * (Link LOS for Design Hour Volume) + .2 * (Int. LOS for Average Peak Hour Conditions) + .1 * (Int. LOS for Design Hour Volume) Where LOS = 1 for C, 2 for D, 3 for E and 5 for F
Ride Quality	10%	1/PC where PC= 1 for Good, 2 for Fair, 3 for Poor and 5 for Very Poor Pavement Condition Rating
Points of Access	10%	=1/[(Number of Access Points per mile) / (Number Allowed by Guidance for the Roadway Type) + 1]
Shoulder Width	10%	Average of Width/Standard up to 1

Based on the scoring system, an assessment of the future (2027) corridor health for SH 33 was produced. The results are illustrated in **Figure 9**. It also flags segments of concern because of potential safety issues or geometric deficiencies. The Visualization Tool has been successfully used by ITD to aid the counties in Eastern Idaho develop plans that anticipate and acknowledge the growth and other changes in the critical state route corridors.

Figure 9 Assessment of Existing Corridor Health for SH 33



Applications of the Visualization Tool

The Visualization Tool was developed for ITD for application to the updates of three corridors in District 6: US 20, US 26 and SH 33. With each of these corridor plan updates, additional information about each corridor has been added to the database to enhance the basic level of data contained for all zones and routes segments. The Visualization Tool has been used to communicate the existing and future conditions that have lead to the recommendations for improvements.

The Visualization Tool developed for ITD has also been designed to support ITD's Long Range Capital Improvement Program (LRCIP) called "Horizons in Transportation" **(13)**. It categorizes improvements by four time horizons:

- STIP – 1 to 5 years
- Near Horizon: 6 to 10 years
- Mid Horizon – 11 to 15 years
- Far Horizon – 16 years and beyond

The Visualization Tool can be used to produce travel forecasts for any horizon year and with it produce an assessment of corridor health. This assessment for multiple years can help ITD define the specific time frame for when improvements will be needed.

ITD's District 6 will soon undertake a district-wide plan that strategically links all of the major corridors and the low-volume corridors together. As part of the process the Visualization Tool will be enhanced to provide for district–wide prioritization and scheduling of improvements across corridors. This application will draw on the tools comprehensive coverage of the state routes in the district and the representation of at least a basic level of data necessary for corridor heath assessment.

Conclusions

District 6 of ITD has found that a computerized, district-wide database can improve corridor planning by:

- Making data that is routinely collected more readily available to planners
- Providing greater consistency in how data are collected and used
- Allowing interactive use of multiple data sources
- Providing a visual display of a corridor's existing or future heath

District 6 has found the Visualization Tool to be useful not only for analyzing and communicating information but also for prioritizing and scheduling investments to maintain the long-term heath of its corridors. After its initial application for the updating of the corridor plans for US 20, US 26 and SH 33, District 6 has decided to use the tool to quickly and efficiently update all of the corridor plans in District 6 and to create an equivalent level of information and assessment for the low-volume corridors for which corridor plans have not been developed in the past. The Visualization Tool has given ITD a consistent way of assessing and visually depicting corridor needs and deficiencies. District 6 plans to use the tool in a District Transportation Plan: the first of its kind in the state.

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APPENDIX C

US 20 Corridor Plan Refresh

Needs Report

District 6 Needs Report

US 20 Corridor Plan Refresh

US 20

Location

US 20
307.51 307.51

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install traffic signal.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 590

Location

US 20
307.58 0

Need
Corridor Planning

System
<None>

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0

Sponsoring Organization
Planning and Project Management Section

Bonneville Metropolitan Planning Organization traffic model predicted in 1998 unacceptable level of service between the Lewisville Interchange and the connection with Interstate 15 for several hours a day by 2015, due to ramps configuration and resulting weaving movements. [Corridor Plan]

The current connection between I-15 and US-20 is reaching the limits of it's capacity, with little space for expansion. The current connection between US-20 and US-26 is in the downtown core of Idaho Falls, forcing regional traffic to travel business loop or county roadways to transfer from one part of the state highway system to another other. [Feasibility Study]

This need remains unmet. Project keys 9917 and 10603 have been created to track funding toward this effort in various programs, but the two projects are not aligned.

☐ *Expired* 199

Location

US 20
307.58 308.7

Need
Level of Service

System
Highway

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Provide left-hand shoulder width of 4' or greater to meet AASHTO shoulder width standard .

This need remains unmet. Time Frame is 10 - 20 yrs.

☐ *Expired* 595

Location

US 20
307.58 309.88

Need
Access Management

System
Access

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct frontage roads related to closure of interchange(s) between Lindsay Blvd. and Science Dr. and to support future development within corridor area between Science Dr. and Lewisville Hwy.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 591

US 20 Corridor Plan Refresh

Location

US 20
307.58 309.88

Need
Multi-modal

System
Nonmotorized

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Develop mixed-use trails for recreational or bicycle commuting purposes.

This need remains unmet. Time Frame is 10 -20 yrs.

☐ *Expired* 592

Location

US 20
307.58 309.88

Need
Multi-modal

System
Nonmotorized

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Develop pedestrian facilities to support future development within corridor area.

This need remains unmet. Time Frame is 10 -15 yrs.

☐ *Expired* 593

Location

US 20
307.58 309.88

Need
Traveler Information

System
Sign

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 594

Location

US 20
307.58 363.37

Need
Multi-modal

System
Safety

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0

Sponsoring Organization
Planning and Project Management Section

As noted in the existing conditions report, US 20 is designated as "most suitable" by the Idaho Bicycling Guide. This designation is appropriate because the area is connected with a vast network of bicycle and hiking trails. However, the rumble strips that have been cut into the concrete to warn motorists that they are driving off the travel way make riding on the shoulder difficult, and in many instances force cyclists into the travel lane.

This need remains unmet.
Further evaluation of the need will be by Traffic Section, as detailed in memo dated 8/20/07 from Shaw to Davison.

☐ *Expired* 196

US 20 Corridor Plan Refresh

Location

US 20
307.58 363.37

Need
Level of Service

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0

System
Sign

Sponsoring Organization
Planning and Project Management Section

The US 20 corridor has the look and feel of an interstate highway facility. However, much of the signage on the US 20 corridor reflects rural highway standards. These are typically post-mounted signs of a size that a driver would expect on a rural route. This corridor, because of its configuration, needs updated and improved signage. Signage on the four-lane segment should meet interstate standards to give drivers more information. Better signage will decrease driver frustration and minimize rapid deceleration of vehicles as drivers quickly slow to avoid missing their intended destination.

One other aspect of signage that needs to be addressed on the US 20 corridor is the amount of information that is given to the traveling public. A signage plan for the corridor should be put in place to determine not only the types of uses that exist in close proximity to the corridor but also to determine the type and amount of information to convey through improved signage.

Finally, the Chester area, where the road converges from a four-lane facility down to two lanes, needs larger signs. A sign bridge may also be appropriate in this area for overhead signs alerting motorists to the traffic change. This area was the site of a fatal traffic accident in 1996 because a motorist got confused and had a head-on collision. The driver did not know that he was in the opposing traffic lane after the road merged down to a two-lane highway. Lighting of these signs is also advisable to ensure visibility.

Additional from conversation with District Traffic Engineer:
The signs on the corridor need improved legibility and reflectivity, as well as upgraded breakaway structures.

This need remains unmet.

Further evaluation of the need will be by Traffic Section, as detailed in memo dated 8/20/07 from Shaw to Davison.

☐ *Expired* 198

Location

US 20
307.71 308.7

Need
Access Management

Driver
US 20 Corridor Plan Refresh(2008)

System
Access

Sponsoring Organization
Planning and Project Management

Close one of more interchanges to meet ITD access spacing standard and maintain traffic operations.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 596

Location

US 20
307.71 308.7

Need
Access Management

Driver
US 20 Corridor Plan Refresh(2008)

System
Access

Sponsoring Organization
Planning and Project Management

Develop local road network related to closure of interchange(s) between Lindsay Blvd. and Science Dr.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 597

US 20 Corridor Plan Refresh

Location	Need	Driver
US 20	Hazard Reduction	Cooperative Agreement A010(998)
307.9 0	**System**	**Sponsoring Organization**
	Safety	Operations

The pathway alongside US-20 between Porter Canal Bridge and John's Hole Bridge carrying US-20 over the Snake River in Idaho Falls was constructed without a physical barrier between it and the adjacent motorway, other than the mountable curb.

The City of Idaho Falls and ITD have signed a Cooperative Agreement to share the costs to upgrade the facility by extending the guardrail now providing only abutment protections, another 420 feet along the pathway to provide a crash barrier. This need is not yet active, waiting City signatures on the Agreement.

☐ *Expired* 434

Location	Need	Driver
US 20	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
308.7 308.7	**System**	**Sponsoring Organization**
	Intersection	Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 599

Location	Need	Driver
US 20	Access Management	US 20 Corridor Plan Refresh(2008)
308.7 309.88	**System**	**Sponsoring Organization**
	Access	Planning and Project Management

Develop local road network to support future development within corridor area.

This need remains unmet. Time Frame is 5 - 15 yrs.

☐ *Expired* 598

Location	Need	Driver
US 20	Traveler Information	Conversation: Davison and Shaw 3 /21/07
309 333	**System**	**Sponsoring Organization**
	Safety	Operations

The district is investing in new, durable pavement striping in high traffic and/or high accident locations, where the year-round functioning of this safety system is critical.

This need remains unmet.

☐ *Expired* 395

Location	Need	Driver
US 20	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
309.88 309.88	**System**	**Sponsoring Organization**
	Intersection	Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 605

US 20 Corridor Plan Refresh

Location	Need	Driver
US 20 309.88 314.51	Access Management	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Access	Planning and Project Management

Construct frontage roads as part of local road network to support future development within corridor area.

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ ***Expired*** 600

Location	Need	Driver
US 20 309.88 314.51	Access Management	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Access	Planning and Project Management

Develop local road network to support future development within corridor area.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ ***Expired*** 601

Location	Need	Driver
US 20 309.88 314.51	Multi-modal	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Nonmotorized	Planning and Project Management

Develop mixed-use trails for recreational or bicycle commuting purposes.

This need remains unmet. Time Frame is 10 -20 yrs.

☐ ***Expired*** 602

Location	Need	Driver
US 20 309.88 314.51	Multi-modal	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Nonmotorized	Planning and Project Management

Develop pedestrian facilities to support future development within corridor area.

This need remains unmet. Time Frame is 10 -15 yrs.

☐ ***Expired*** 603

Location	Need	Driver
US 20 309.88 314.51	Traveler Information	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Sign	Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ ***Expired*** 604

Location	Need	Driver
US 20	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
311.36 311.36	**System**: Intersection	**Sponsoring Organization**: Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 606

Location	Need	Driver
US 20	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
313.46 313.46	**System**: Intersection	**Sponsoring Organization**: Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 607

Location	Need	Driver
US 20	Access Management	US 20 Corridor Plan Refresh(2008)
314.5 322.3	**System**: Access	**Sponsoring Organization**: Planning and Project Management

Develop local road network to support future development within corridor area.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 609

Location	Need	Driver
US 20	Access Management	US 20 Corridor Plan Refresh(2008)
314.5 322.3	**System**: Access	**Sponsoring Organization**: Planning and Project Management

Construct frontage roads as part of local road network to support future development within corridor area.

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 608

Location	Need	Driver
US 20	Multi-modal	US 20 Corridor Plan Refresh(2008)
314.5 322.3	**System**: Nonmotorized	**Sponsoring Organization**: Planning and Project Management

Develop pedestrian facilities to support future development within corridor area.

This need remains unmet. Time Frame is 10 -15 yrs.

☐ *Expired* 611

US 20 Corridor Plan Refresh

Location

US 20
314.5 322.3

Need
Multi-modal

System
Nonmotorized

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Develop mixed-use trails for recreational or bicycle commuting purposes.

This need remains unmet. Time Frame is 10 -20 yrs.

☐ *Expired* 610

Location

US 20
314.5 322.3

Need
Asset Lifecycle

System
Pavement

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Reconstruct or resurface pavement along 50% of segment.

'This need remains unmet. Time Frame is 0 - 5 yrs. Resurfacing for part of the segment started in 2008 May.

☐ *Expired* 613

Location

US 20
314.5 322.3

Need
Traveler Information

System
Sign

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 612

Location

US 20
315.25 0

Need
Level of Service

System
Luminaire

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

Sponsoring Organization
Operations

Ucon Interchange #315

With the exception of the urban areas, no outdoor illumination exists on the corridor. At night and especially during inclement weather, visibility around the at-grade intersections is very low. Some of the intersections cross the corridor at less than a 90 degree angle, which makes seeing the headlights or tail lights of a crossing or turning vehicle very difficult.

Nighttime illumination of the at-grade intersections would do two things. First, it would inform motorists that they are in a populated area, and they need to be alert for traffic. Secondly, it would improve the visibility of crossing traffic to motorists on US 20. Improved lighting could help to prevent accidents in the future and should be explored as an interim measure at intersections that will not be converted or closed by the year 2010. Lighting improvements should be incorporated into the design of individual interchanges as they near construction.

Internal correspondence: Traffic Section to Planning Section 5/30/06
The existing interchanges recommended for upgraded treatment by adding lighting appropriate for an urban area are: #315 (Ucon), #332 (South Rexburg), #333 (Rexburg) and #337 (North Rexburg).

Install complete lighting at Ucon Interchange. Time Frame is 15-20 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need remains unmet, but will be addressed through an STM project key 10961 scheduled for completion in 2008.

☐ *Expired* 197

US 20 Corridor Plan Refresh

Location	Need	Driver
US 20	Asset Lifecycle	Conversation: Gilstrap and Shaw
317.9 0	**System**	**Sponsoring Organization**
	Bridge	Operations

Bridge #12414 deck is not draining water at a high enough rate to keep the surface accumulation to a safe level.

This need remains unmet.

☐ *Expired* 73

Location	Need	Driver
US 20	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
317.91 317.91	**System**	**Sponsoring Organization**
	Intersection	Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 615

Location	Need	Driver
US 20	Corridor Planning	Board Action (Request for Design Approval: Holbrook Interchange)
319.3 321.6	**System**	**Sponsoring Organization**
	<None>	Idaho Transportation Board

The Location Study Report for Key 7816 (Holbrook Interchange) was completed November 20th, 2002, and recommended closure of the existing, at-grade intersection between Jefferson County Holbrook Road and US 20, without construction of a new interchange. Part of the justification for closure without new construction was:

"The selection of Alternative D gives the local government jurisdictions the time needed to plan this part of their community, and ensure that development proceeds in a well-planned and orderly pace. The Idaho Transportation Department District 6 office is available to assist local government jurisdictions in planning their transportation infrastructure to ensure that growth and development of the area can be accommodated through planned and fiscally prudent transportation infrastructure investment over time."

The Idaho Transportation Board met in January of the following year and accepted the recommendation. They also resolved:

"...that ITD District 6 shall continue to work with the City of Rigby in determining the future access needs for the S. Rigby area based upon the City's Transportation Plan."

This need will be met primarily through project key 9573 City of Rigby Transportation Plan, which will bring Rigby and other communities in Jefferson County together with the county in a coherent process for identifying their future transportation needs, including connectivity to the state highway system. There will be secondary efforts toward meeting this need in project key 9909 US 20 Corridor Plan Refresh Idaho Falls to Ashton Hill Bridge, which will capture identified needs from a variety of studies of local connectivity needs in multiple counties. There will be tertiary efforts within the District operations umbrella in their coordination with other public agencies.

☐ *Expired* 260

US 20 Corridor Plan Refresh

Location	Need	Driver
	Asset Lifecycle	State Transportation Improvement Program for 2006 - 2010
US 20	**System**	**Sponsoring Organization**
320.08 327.64	Pavement	Planning and Project Management Section

The Department has determined that pavement condition within the project limits is deficient and must be repaired to improve motorist safety, ride and prevent further deterioration of the roadway. The pavement condition for this reach of highway US-20 based on the 2005 Cracking and Roughness Indices is 1.8 to 1.9 which falls in the Very Poor condition classification. The roadway surface is concrete that was built in the early 1970's with the original construction of the four-lane divided highway. Through normal wear and tear the concrete slabs have cracked and shifted, causing roughness and stability problems. Crack sealing and surface grindings have been done as maintenance activities to extend the life of the concrete surface.

'This need will be met by project key 9005 Rigby North and South, scheduled in the State Transportation Improvement Program for completion in 2008. Resurfacing started in 2008 May.

☐ *Expired* 124

Location	Need	Driver
	Asset Lifecycle	Memo from District Bridge Foreman Bob Dial
US 20	**System**	**Sponsoring Organization**
320.64 0	Bridge	Operations

US-20B, MP 320.64 South Rigby Interchange - Bridge Key No. 12710
Over US-20

NOTE from District 6 Bridge Inspector Bob Dial 12/7/2007: Bridge deck is 45% delaminated throughout.

FROM BRIDGE REPORT: 5/3/2006 SUFFICIENCY RATING - 92.0
Concrete Deck
Top of the deck has a few areas of delamination in the overlay and numerous cracks. A few patched areas.

This need remains unmet.

☐ *Expired* 499

Location	Need	Driver
	Access Management	US 20 Corridor Plan Refresh(2008)
US 20	**System**	**Sponsoring Organization**
320.64 320.64	Access	Planning and Project Management

Modify existing half-interchange to full interchange.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 617

Location	Need	Driver
	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
US 20	**System**	**Sponsoring Organization**
320.64 320.64	Intersection	Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 616

Location	Need	Driver
US 20	Asset Lifecycle	Memo from District Bridge Foreman Bob Dial
320.86 0	**System**	**Sponsoring Organization**
	Bridge	Operations

US-20, MP 320.86 North Bound Lanes - Bridge Key No. 12435
Burgess Canal Bridge

NOTE from District 6 Bridge Inspector Bob Dial 12/7/2007: Bridge deck is delaminated 12' in from both ends. Approach slabs are 40% delaminated.

FROM BRIDGE REPORT: 4/10/2007 SUFFICIENCY RATING - 95.8
Concrete Deck - Protected With Rigid Overlay
This bridge has a reinforced concrete deck with dense concrete overlay. Top of the deck has numerous random cracks, some up to 1/16 inch wide. The overlay concrete has delaminated along the deck edge at the abutments where repaired. A few of the broken areas have been repaired but the overlay is still breaking up around the repaired areas. Most of the repaired areas have delamination. The deck bottom has numerous hairline transverse and diagonal cracks. Several of the cracks have efflorescence stains on them with water seepage near the abutments.

This need remains unmet.

☐ ***Expired*** 496

Location	Need	Driver
US 20	Asset Lifecycle	Memo from District Bridge Foreman Bob Dial
321.33 0	**System**	**Sponsoring Organization**
	Bridge	Operations

US-20, MP 321.33 North Bound Lanes - Bridge Key No. 12440
SH-48 Overpass

NOTE from District 6 Bridge Inspector Bob Dial 12/7/2007: Bridge deck is delaminated 12' in from both ends. Approach slabs are 100% delaminated.
Bob said that the top layer of rebar on this bridge is rusted through and recommends it being replaced. He believes the deck should be able to be restored and not need a total replacement.

FROM BRIDGE REPORT: 5/01/2006 SUFFICIENCY RATING - 96.5
Concrete Deck - Bare
Reinforced concrete with dense coat concrete overlay. The overlay has transverse and diagonal cracking up to 1/8 inch with a few areas of delamination at the end of the deck over the abutments. A few spalled areas that have been patched with asphalt and concrete at the west abutment. The deck bottom has hairline cracking with efflorescence stains primarily at the abutments. East bound lane at abutment 2 has an area in the left lane that is cracking and delaminating.

This need remains unmet.

☐ ***Expired*** 494

Location	Need	Driver
US 20	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
322.26 322.26	**System**	**Sponsoring Organization**
	Intersection	Planning and Project Management

Install complete lighting at interchange.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ ***Expired*** 618

US 20 Corridor Plan Refresh

Location	Need	Driver
US 20 322.3 331.43	Access Management	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Access	Planning and Project Management

Develop local road network to support future development outside of Rigby and Rexburg.

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 620

Location	Need	Driver
US 20 322.3 331.43	Access Management	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Access	Planning and Project Management

Construct frontage roads related to intersection closures and as part of local road network to support future development outside of Rigby and Rexburg.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 619

Location	Need	Driver
US 20 322.3 331.43	Multi-modal	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Nonmotorized	Planning and Project Management

Develop pedestrian facilities to support future development outside of Rigby and Rexburg.

This need remains unmet. Time Frame is 10 -15 yrs.

☐ *Expired* 622

Location	Need	Driver
US 20 322.3 331.43	Multi-modal	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Nonmotorized	Planning and Project Management

Develop mixed-use trails for recreational or bicycle commuting purposes.

This need remains unmet. Time Frame is 10 -20 yrs.

☐ *Expired* 621

Location	Need	Driver
US 20 322.3 331.43	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
	System	**Sponsoring Organization**
	Pavement	Planning and Project Management

Reconstruct or resurface pavement along 95% of segment.

'This need remains unmet. Time Frame is 0 - 5 yrs. Resurfacing for part of the segment started in 2008 May.

☐ *Expired* 624

Location

US 20
322.3 331.43

Need
Traveler Information

Driver
US 20 Corridor Plan Refresh(2008)

System
Sign

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 623

Location

US 20
323.58 0

Need
Asset Lifecycle

Driver
State Transportation Improvement Program for 2006 - 2010

System
Bridge

Sponsoring Organization
Bridge Section

The last inspection of the structures over the Dry Bed Snake River was performed in September, 2003. The condition of the structures carrying the northbound and southbound lanes of US-20 is rated Good (7) or better for all elements except the deck, which is rated as Fair (5). The deck is 8-inches thick with a dense concrete overlay. Deficiencies of the deck include spalling of the concrete overlay, cracking of the top of deck (crack widths 1/32inch or smaller), and hairline cracking with efflorescence stains on the bottom of the deck. Spalling of the overlay has been patched by ITD Maintenance personnel.

This need will be met by the construction of project key 9246 Idaho Canal and Snake River Dry Bed Canal Bridges, scheduled for completion in 2008.

☐ *Expired* 100

Location

US 20
325.03 0

Need
Asset Lifecycle

Driver
Memo from District Bridge Foreman Bob Dial

System
Bridge

Sponsoring Organization
Operations

US-20, MP 325.03 North Bound Lanes - Bridge Key No. 12480
Menan Canal

NOTE from District 6 Bridge Inspector Bob Dial 12/7/2007: Bridge deck is delaminated 12' in from both ends. Approach slabs are 35% delaminated.

FROM BRIDGE REPORT: 9/6/2007 SUFFICIENCY RATING - 98.2
Concrete Deck - Protected With Thin Overlay
Reinforced concrete deck with dense coat overlay. The deck surface has hairline to 1/16 inch cracking and delamination along the deck edge at the joint with the approach slab. Deck bottom has diagonal cracks with efflorescence stains near the abutments.

This need remains unmet.

☐ *Expired* 492

Location

US 20
325.64 325.64

Need
Level of Service

Driver
US 20 Corridor Plan Refresh(2008)

System
Intersection

Sponsoring Organization
Planning and Project Management

Construct capacity improvement. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 625

Location

US 20
325.64 325.64

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 5- 10 yrs.

☐ *Expired* 626

Location

US 20
325.99 0

Need
Level of Service

System
Intersection

Driver
Location Study Report: US 20 Menan-Lorenzo and Thornton Interchanges and US 20 C

Sponsoring Organization
District 6

Year 2003 traffic counts indicate that the average daily traffic (ADT) on US-20 ranges from 18,000 vehicles per day (vpd), in the vicinity of Lorenzo, to 15,000 vpd at Thornton. Traffic forecasts for the Lorenzo to Thornton segment of the US-20 corridor indicates an increase of 58 percent between 2003 and 2029. Growth in traffic volumes will continue to deteriorate existing intersection conditions. Anticipated increases on US-20 and intersecting county roads will raise the accident rate for at-grade crossings above the average, based on observed conditions at higher ADT locations.

Accident statistics from 1996 through 2000 indicate that 11 serious injury accidents, one of which was a fatality, occurred in the project area during these 5 years. Of the 11, five appear to be related to intersection movements. Because of the projected traffic growth and the corresponding accidents, two interchanges are proposed for construction.

The US-20 Corridor Plan as adopted by the Idaho Transportation Department Board on June 23, 2000, concluded that US-20 should be a full-access control facility in the 6.8-mile (10.9-kilometer) segment between Rigby and Thornton.

Construct full interchange at Menan-Lorenzo Hwy. and close intersections at E. 600 N. Rd., E. 680 N. Rd., and E. 700 N. Rd. (Menan-Lorenzo Hwy.) Time frame is 0-5 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need will by met by the Menan-Lorenzo Interchange project key 8132 scheduled for completion in 2010.

☐ *Expired* 262

Location

US 20
325.99 325.99

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct capacity improvement. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 627

Location

US 20
325.99 325.99

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 629

US 20 Corridor Plan Refresh

Location

US 20
326.81 326.81

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct capacity improvement. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 631

Location

US 20
326.81 326.81

Need
Access Management

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Close intersection.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 630

Location

US 20
326.81 326.81

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 632

Location

US 20
327.64 331.43

Need
Asset Lifecycle

System
Pavement

Driver
District 6 Pavement Management Plan 2007

Sponsoring Organization
Planning and Project Management Section

The concrete paving is at the end of its useful life and must be replaced.

This need remains unmet.

☐ *Expired* 382

Location

US 20
328.23 328.23

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 635

Location

US 20
328.23 328.23

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct capacity improvement. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 634

Location

US 20
328.56 0

Need
Level of Service

System
Intersection

Driver
Location Study Report: US 20 Menan-Lorenzo and Thornton Interchanges / US 20 Cor

Sponsoring Organization
District 6

Year 2003 traffic counts indicate that the average daily traffic (ADT) on US-20 ranges from 18,000 vehicles per day (vpd), in the vicinity of Lorenzo, to 15,000 vpd at Thornton. Traffic forecasts for the Lorenzo to Thornton segment of the US-20 corridor indicates an increase of 58 percent between 2003 and 2029. Growth in traffic volumes will continue to deteriorate existing intersection conditions. Anticipated increases on US-20 and intersecting county roads will raise the accident rate for at-grade crossings above the average, based on observed conditions at higher ADT locations.

Accident statistics from 1996 through 2000 indicate that 11 serious injury accidents, one of which was a fatality, occurred in the project area during these 5 years. Of the 11, five appear to be related to intersection movements. Because of the projected traffic growth and the corresponding accidents, two interchanges are proposed for construction.

The US-20 Corridor Plan as adopted by the Idaho Transportation Department Board on June 23, 2000, concluded that US-20 should be a full-access control facility in the 6.8-mile (10.9-kilometer) segment between Rigby and Thornton.

Construct full interchange, and close intersections at 6800 S. Rd, 4300 W. Rd., 3800 S. Rd and 5200 S. Rd, and field approach south of Thornton. Time Frame is 0-5 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need remains unmet. The Thornton Interchange project key 8454 is unfunded in the State Transportation Improvement Program.

☐ *Expired* 261

Location

US 20
329.67 329.67

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 638

Location

US 20
329.67 329.67

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct capacity improvement. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 637

US 20 Corridor Plan Refresh

Location

US 20
329.67 329.67

Need
Access Management

Driver
US 20 Corridor Plan Refresh(2008)

System
Intersection

Sponsoring Organization
Planning and Project Management

Close intersection.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 636

Location

US 20
331.43 336.85

Need
Access Management

Driver
US 20 Corridor Plan Refresh(2008)

System
Access

Sponsoring Organization
Planning and Project Management

Construct frontage roads as part of local road network serving future development within corridor area.

This need remains unmet. Time Frame is 10 -15 yrs.

☐ *Expired* 639

Location

US 20
331.43 336.85

Need
Access Management

Driver
US 20 Corridor Plan Refresh(2008)

System
Access

Sponsoring Organization
Planning and Project Management

Develop local road network to support future development outside of Rexburg.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 640

Location

US 20
331.43 336.85

Need
Multi-modal

Driver
US 20 Corridor Plan Refresh(2008)

System
Nonmotorized

Sponsoring Organization
Planning and Project Management

Develop pedestrian facilities to support new or existing areas of development within the corridor area.

This need remains unmet. Time Frame is 10 -15 yrs.

☐ *Expired* 641

Location

US 20
331.43 336.85

Need
Traveler Information

Driver
US 20 Corridor Plan Refresh(2008)

System
Sign

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 642

Location

US 20
331.94 0

Need
Level of Service

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

System
Luminaire

Sponsoring Organization
Operations

South Rexburg Interchange #332

With the exception of the urban areas, no outdoor illumination exists on the corridor. At night and especially during inclement weather, visibility around the at-grade intersections is very low. Some of the intersections cross the corridor at less than a 90 degree angle, which makes seeing the headlights or tail lights of a crossing or turning vehicle very difficult.

Nighttime illumination of the at-grade intersections would do two things. First, it would inform motorists that they are in a populated area, and they need to be alert for traffic. Secondly, it would improve the visibility of crossing traffic to motorists on US 20. Improved lighting could help to prevent accidents in the future and should be explored as an interim measure at intersections that will not be converted or closed by the year 2010. Lighting improvements should be incorporated into the design of individual interchanges as they near construction.

Internal correspondence: Traffic Section to Planning Section 5/30/06
The existing interchanges recommended for upgraded treatment by adding lighting appropriate for an urban area are: #315 (Ucon), #332 (South Rexburg), #333 (Rexburg) and #337 (North Rexburg).

Install partial lighting at interchange . Time frames is 10-15 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need remains unmet, but will be addressed through an STM Project Priority Ranking of 11, and an allocation of $160k from the STM budget for 2011.

☐ *Expired* 333

Location

US 20
333.44 0

Need
Level of Service

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

System
Luminaire

Sponsoring Organization
Planning and Project Management Section

Rexburg Interchange #333

With the exception of the urban areas, no outdoor illumination exists on the corridor. At night and especially during inclement weather, visibility around the at-grade intersections is very low. Some of the intersections cross the corridor at less than a 90 degree angle, which makes seeing the headlights or tail lights of a crossing or turning vehicle very difficult.

Nighttime illumination of the at-grade intersections would do two things. First, it would inform motorists that they are in a populated area, and they need to be alert for traffic. Secondly, it would improve the visibility of crossing traffic to motorists on US 20. Improved lighting could help to prevent accidents in the future and should be explored as an interim measure at intersections that will not be converted or closed by the year 2010. Lighting improvements should be incorporated into the design of individual interchanges as they near construction.

Internal correspondence: Traffic Section to Planning Section 5/30/06
The existing interchanges recommended for upgraded treatment by adding lighting appropriate for an urban area are: #315 (Ucon), #332 (South Rexburg), #333 (Rexburg) and #337 (North Rexburg).

Install partial lighting at interchange. Time frame is 10-15 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need has been partially met by the use of urban lighting standards in the design of interchanges since the Corridor Plan was adopted. Additionally, District Traffic Section has recommended the upgrading of four interchanges. Additionally, each at-grade intersection north of St. Anthony will be evaluated for general safety improvements, including lighting.

☐ *Expired* 334

US 20 Corridor Plan Refresh

Location	Need	Driver
	Asset Lifecycle	Memo from District Bridge Foreman Bob Dial
US 20 334.45 0	**System**	**Sponsoring Organization**
	Bridge	Operations

US-20, MP 334.45 North Bound Lanes - Bridge Key No. 12565
South Fork Teton River

NOTE from District 6 Bridge Inspector Bob Dial 12/7/2007: Approach slabs are 60% delaminated.

FROM BRIDGE REPORT: 9/12/2007 SUFFICIENCY RATING - 95.9
Concrete Deck - Protected with coated bars.
Reinforced concrete deck. WS sealer placed over top concrete deck 2003. Hairline to 1/16 inch diagonal and transverse cracks showing in the surface before ws placed. 2 diagonal cracks showing at abutments. No delamination found. The deck bottom has H/L cracks in the same location as top of deck visible with efflorescence stains.
Reinforced Concrete Approach Slab w/ or w/o AC Overlay
Concrete approach slabs in fair condition. Alligator cracking up to 1/16 inch. Patched areas remain stable.

This need remains unmet.

☐ *Expired* 501

Location	Need	Driver
	Level of Service	US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0
US 20 336.85 0	**System**	**Sponsoring Organization**
	Luminaire	Operations

North Rexburg Interchange #337

With the exception of the urban areas, no outdoor illumination exists on the corridor. At night and especially during inclement weather, visibility around the at-grade intersections is very low. Some of the intersections cross the corridor at less than a 90 degree angle, which makes seeing the headlights or tail lights of a crossing or turning vehicle very difficult.

Nighttime illumination of the at-grade intersections would do two things. First, it would inform motorists that they are in a populated area, and they need to be alert for traffic. Secondly, it would improve the visibility of crossing traffic to motorists on US 20. Improved lighting could help to prevent accidents in the future and should be explored as an interim measure at intersections that will not be converted or closed by the year 2010. Lighting improvements should be incorporated into the design of individual interchanges as they near construction.

Internal correspondence: Traffic Section to Planning Section 5/30/06
The existing interchanges recommended for upgraded treatment by adding lighting appropriate for an urban area are: #315 (Ucon), #332 (South Rexburg), #333 (Rexburg) and #337 (North Rexburg).

This need remains unmet, but will be addressed through an STM Project Priority Ranking of 12, and an allocation of $160k from the STM budget for 2011.

☐ *Expired* 335

Location	Need	Driver
	Asset Lifecycle	US 20 Corridor Plan Refresh(2008)
US 20 336.85 336.85	**System**	**Sponsoring Organization**
	Intersection	Planning and Project Management

Install partial lighting at interchange.

This need remains unmet. Time Frame is 10 - 15 yrs.

☐ *Expired* 647

Location

US 20
336.85 340.22

Need
Access Management

System
Access

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct frontage road related to closure of E. 2000 N. Rd.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 645

Location

US 20
336.85 340.22

Need
Asset Lifecycle

System
Pavement

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Reconstruct or resurface pavement along 95% of segment.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 648

Location

US 20
336.85 340.22

Need
Traveler Information

System
Sign

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 646

Location

US 20
336.86 340.08

Need
Asset Lifecycle

System
Pavement

Driver
District 6 Pavement Management Plan 2007

Sponsoring Organization
Planning and Project Management Section

The concrete paving is at the end of its useful life and must be replaced.

This need remains unmet.

☐ *Expired* 384

Location

US 20
338.26 338.26

Need
Asset Lifecycle

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install partial lighting on east side of interchange.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 649

Location

US 20
339.42 0

Need
Asset Lifecycle

System
Bridge

Driver
Memo from District Bridge Foreman Bob Dial

Sponsoring Organization
Operations

US-20, MP 339.42 North Bound Lanes - Bridge Key No. 12590
North Fork Teton River

NOTE from District 6 Bridge Inspector Bob Dial 12/7/2007: Bridge deck delaminated 16' in from both ends.

FROM BRIDGE REPORT: 7/24/2007 SUFFICIENCY RATING - 96.0
Concrete Deck - Protected With Rigid Overlay
Reinforced concrete deck. Top of the deck has a 2 ½ inch beaded wax overlay down to the top reinforcing steel composite with 5 inch deck = 7 ½ inch concrete deck. Deck surface has numerous diagonal and transverse cracks to 1/8 inch plus that have been sealed. The edge of the deck at abutment 1 has been repaired. Top of the deck at the south joint continues to spall out. The deck edge at abutment 2 has one area of delamination at the NW side. The travel lane has exposed aggregate from traffic tires wearing away the concrete. The deck bottom has hairline diagonal and transverse cracks with efflorescence stains.

This need remains unmet.

☐ *Expired* 503

Location

US 20
339.91 0

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

Sponsoring Organization
Planning and Project Management Section

ITD Maintenance Shed: closure in ten to twenty years. [Activation = Plan approval date 6/23/2000 plus ten years.]

Close intersection. Time frame is 0-10 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need is not yet active.

☐ *Expired* 185

Location

US 20
339.91 339.91

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 10 - 20 yrs.

☐ *Expired* 651

Location

US 20
340.08 340.22

Need
Level of Service

System
Highway

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Provide right-hand shoulder width of 8' or greater to meet AASHTO shoulder width standard.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 652

US 20 Corridor Plan Refresh

Location

US 20
340.22 343.35

Need
Level of Service

System
Highway

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Provide right-hand shoulder width of 8' or greater to meet AASHTO shoulder width standard.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ *Expired* 654

Location

US 20
340.22 347.85

Need
Asset Lifecycle

System
Pavement

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Reconstruct or resurface pavement along 80% of segment.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 655

Location

US 20
340.22 347.85

Need
Traveler Information

System
Sign

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 653

Location

US 20
341.38 0

Need
Level of Service

System
Access

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

Sponsoring Organization
Planning and Project Management Section

Wilford Road (200 South) [sic]: full interchange in ten to twenty years. [Activation = Plan approval date 6/23/2000 plus ten years.]

Two main issues have emerged with regard to the plan in Segment 5. First was access at Wilford Rd./200 North. Originally, we had an interchange at the S. St. Anthony access with no additional access proposed at 200 North. Based on public input received at open houses along the corridor, it was determined that a full interchange was needed at 200 North. This recommendation became part of ITD's recommended alternative.

The development of a new interchange at Wilford Road necessitated the removal of another interchange elsewhere on the corridor. To accommodate this change, an interchange that was originally proposed for the South St. Anthony area was downgraded to an overpass with access north into St. Anthony. When the recommended alternative was presented to the public and to the US 20 Corridor Planning Advisory Committee, it became evident that this business and industrial area also required full access to the highway. The recommended alternative, therefore, has a full interchange proposed for the South St. Anthony access.

Construct full interchange. Time frame is 0-10 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need is not yet active. Further understanding of a possible project purpose was to be developed in proposed project key 10597 South St. Anthony Access Control Feasibility Study, scheduled in the State Transportation Improvement Program for 2007 - 2011, but the project was unfunded.

☐ *Expired* 186

US 20 Corridor Plan Refresh

Location

US 20
342.54 0

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

Sponsoring Organization
Planning and Project Management Section

300 South [sic]: closure in ten to twenty years. [Activation = Plan approval date 6/23/2000 plus ten years.]

Close Intersection. Time frame is 0-10 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need is not yet active. Further understanding of a possible project purpose was to be developed in proposed project key 10597 South St. Anthony Access Control Feasibility Study, scheduled in the State Transportation Improvement Program for 2007 - 2011, but the project was unfunded.

☐ *Expired* 187

Location

US 20
342.54 342.54

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install NB and SB right-turn lanes. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 10 - 20 yrs.

☐ *Expired* 658

Location

US 20
343.35 349.22

Need
Asset Lifecycle

System
Pavement

Driver
District 6 Pavement Management Plan 2007

Sponsoring Organization
Planning and Project Management Section

The concrete paving is at the end of its useful life and must be replaced.

This need remains unmet.

☐ *Expired* 386

Location

US 20
343.64 0

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

Sponsoring Organization
Planning and Project Management Section

South St. Anthony (400 North): full interchange in ten to twenty years. [Activation = Plan approval date 6/23/2000 plus ten years.]

Two main issues have emerged with regard to the plan in Segment 5. First was access at Wilford Rd./200 North. Originally, we had an interchange at the S. St. Anthony access with no additional access proposed at 200 North. Based on public input received at open houses along the corridor, it was determined that a full interchange was needed at 200 North. This recommendation became part of ITD’s recommended alternative.

The development of a new interchange at Wilford Road necessitated the removal of another interchange elsewhere on the corridor. To accommodate this change, an interchange that was originally proposed for the South St. Anthony area was downgraded to an overpass with access north into St. Anthony. When the recommended alternative was presented to the public and to the US 20 Corridor Planning Advisory Committee, it became evident that this business and industrial area also required full access to the highway. The recommended alternative, therefore, has a full interchange proposed for the South St. Anthony access.

Based upon input from the CPAC and the public, this was changed from an overpass to a full interchange to better serve business in St. Anthony's south end.

Construct full interchange. Time frame is 0-10 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need is not yet active.

☐ *Expired* 188

US 20 Corridor Plan Refresh

Location
US 20
343.94 0

Need
Asset Lifecycle

Driver
Conversation: Holden and Shaw

System
Pavement

Sponsoring Organization
Planning and Project Management Section

The planking between the railroad tracks at Crossing #812335H (Railroad 197556 - Union Pacific) is a contributing factor in pavement roughness on US-20 south of St. Anthony, in both the northbound and southbound lanes.

This need remains unmet.

☐ *Expired* 418

Location
US 20
345.6 345.6

Need
Asset Lifecycle

Driver
US 20 Corridor Plan Refresh(2008)

System
Intersection

Sponsoring Organization
Planning and Project Management

Install partial lighting.

This need remains unmet. Time Frame is 15 - 20 yrs.

☐ *Expired* 660

Location
US 20
347.85 347.85

Need
Access Management

Driver
US 20 Corridor Plan Refresh(2008)

System
Intersection

Sponsoring Organization
Planning and Project Management

Construct two-stage crossing improvement with widened median.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 661

Location
US 20
347.85 347.85

Need
Level of Service

Driver
US 20 Corridor Plan Refresh(2008)

System
Intersection

Sponsoring Organization
Planning and Project Management

Install NB right-turn lane.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 664

Location
US 20
347.85 352.75

Need
Traveler Information

Driver
US 20 Corridor Plan Refresh(2008)

System
Sign

Sponsoring Organization
Planning and Project Management

Ensure conformity of signage with recent federal retroreflectivity requirements and MUTCD guidelines for expressway signing size.

This need remains unmet. Time Frame is 5 -10 yrs.

☐ *Expired* 662

US 20 Corridor Plan Refresh

Location

US 20
349.34 349.34

Need
Access Management

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Close intersection.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 665

Location

US 20
349.34 349.34

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install NB right-turn lane. (This improvement would be unnecessary if this intersection is closed).

This need remains unmet. Time Frame is 10 - 20 yrs.

☐ *Expired* 666

Location

US 20
350.73 350.73

Need
Access Management

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Close intersection.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 667

Location

US 20
352.24 352.24

Need
Access Management

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct two-stage crossing improvement with widened median.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 668

Location

US 20
352.74 352.74

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install NB and SB right-turn lanes.

This need remains unmet. Time Frame is 10 -20 yrs.

☐ *Expired* 670

US 20 Corridor Plan Refresh

Location

US 20
352.74 352.74

Need
Access Management

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Construct two-stage crossing improvement with widened median.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 669

Location

US 20
352.75 361.82

Need
Asset Lifecycle

System
Pavement

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Reconstruct or resurface pavement along less than 5% of segment.

This need remains unmet. Time Frame is 0 - 5 yrs.

☐ *Expired* 672

Location

US 20
353.05 353.05

Need
Asset Lifecycle

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install overhead sign with "Divided Highway Ends" message and beacons.

☐ *Expired* 673

Location

US 20
353.05 363.37

Need
Level of Service

System
Highway

Driver
US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0 / US 20 Corridor Plan Refresh(

Sponsoring Organization
Planning and Project Management Section

There is a need for passing opportunities in each direction, as evenly spaced as practical. In the areas of these passing lanes, there is a need to limit access through purchasing of existing rights and restricting the issuance of new rights.

Construct passing lanes. Time frame is 10-20 yrs. (Confirmed by US 20 Corridor Plan Refresh - 2008)

This need remains unmet.

☐ *Expired* 194

Location

US 20
354.11 0

Need
Access Management

System
Turnout

Driver
Operations data base

Sponsoring Organization
Operations

Need to create safe area for snow plows working US 20 between Chester and Ashton to pull off the roadway and turn around for making multiple plowing passes.

☐ *Expired* 487

US 20 Corridor Plan Refresh

Location	Need	Driver
	Economics	US 20 Corridor Plan Idaho Falls to Ashton Hill Bridge v0
US 20	**System**	**Sponsoring Organization**
360.32 360.92	Highway	Planning and Project Management Section

The City of Ashton is on the two-lane portion of the corridor in Segment 7. This area is beginning to grow and experience a vast influx of summertime traffic. During the peak tourist and sportsman seasons, this very small city must accommodate traffic far greater than its population would ever produce. A part of the problem Ashton is experiencing might be solved by upgrading the city infrastructure around US 20. The community has no sidewalks, bicycle lanes, and very little street lighting along the corridor. Improving the infrastructure of this community along the US 20 corridor would force traffic to move through the community in a more orderly manner. By installing sidewalks and bicycle lanes, the city residents can feel comfortable walking or biking to local events or commercial areas. This separation of travel modes will give a more serene feel to local residents. The installation of bicycle lanes will cause the roadway to be narrower and more defined, encouraging traffic to slow down through town. One other important aspect of upgrading Ashton's infrastructure would be to install some type of access management within the community (i.e. curb and gutter with defined driveway access points). Presently, traffic patterns may be confusing and frustrating because there are no defined access points for local businesses fronting along US 20. This situation leads to various approach angles for turning traffic and generally adds to the chaotic feeling that local residents described during the summer season. [Pages 28 & 29]

Curb, gutter, and sidewalk along US 20 within the city limits of Ashton. As part of this recommendation, appropriate locations for driveway access and spacing standards should be developed. Development of sidewalks within the city limits of Ashton produced some concerns. It wasn’t that residents were against having the sidewalks. Rather, they were concerned about costs that they would have to bear, and the amount of their property that sidewalks, curb, and gutter would require. One possible solution to these concerns is to develop sidewalks only on the east side of the highway. This plan would serve many businesses and impact fewer residences. [Page 89]

[This need has been categorized as Economic due to the combination of factors that are best described in the context of efforts by the City of Ashton to improve its highway approaches and promote themselves as a viable economic hub for area residents and local businesses.]

This need is not yet active. US-20 must be first placed into the context of the Fremont County road grid system and the City of Ashton's growth vision, then a Transportation Access Plan developed cooperatively with the community, before investments can be made that would move the treatment of US-20 within the City boundary from the rural character to one more urban.

☐ *Expired* 195

Location	Need	Driver
	Corridor Planning	State Access Management Plan
US 20	**System**	**Sponsoring Organization**
360.32 360.92	Planning	Traffic Section

The need exists to plan for future access to US-20 through the Ashton area that maintains safe connections between the local and state transportation systems, and promotes the long term viability of the state highway system. The Transportation Access Plan (TAP) is a result of both community and corridor planning by public agencies working in open consultation with the general public, and addresses regional transit, safe connections, traffic volumes, level of service, emergency response, disaster relief and evacuation, commerce and the natural environment. The planning horizon for the TAP is 20 years or full build-out of the corridor, whichever is sooner.

This need is not yet active. US-20 must be first placed into the context of the Fremont County road grid system and the City of Ashton's growth vision, before a Transportation Access Plan can be developed cooperatively with the community.

☐ *Expired* 461

Location	Need	Driver
	Access Management	US 20 Corridor Plan Refresh(2008)
US 20	**System**	**Sponsoring Organization**
360.34 361.06	Access	Planning and Project Management

Identify appropriate access locations and construct curbs gutters, and sidewalks.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ *Expired* 674

US 20 Corridor Plan Refresh

Location

US 20
360.34 361.06

Need
Economics

System
Access

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

See access management improvements for Ashton.

This need remains unmet. Time Frame is 0 - 10 yrs.

☐ ***Expired*** 676

Location

US 20
360.57 360.57

Need
Level of Service

System
Intersection

Driver
US 20 Corridor Plan Refresh(2008)

Sponsoring Organization
Planning and Project Management

Install SB right-turn lane.

This need remains unmet. Time Frame is 5 - 10 yrs.

☐ ***Expired*** 677

Location

US 20
360.57 0

Need
Level of Service

System
Intersection

Driver

Sponsoring Organization
Traffic Section

The need exists to improve one leg of the intersection between US-20 and SH-47: Fremont County Road 1300N, to better define the intersection and add a left turn bay.

This need remains unmet.

☐ ***Expired*** 462
